Job Description

August 19, 1997

Name: Jeff Schmidt
Title: Senior Associate Editor
Reports to: Editor, Physics Today

BRIEF DESCRIPTION OF JOB DUTIES: Take responsibility for and edit feature articles.

ESSENTIAL FUNCTIONS:

1. Edit feature articles in conjunction with authors; negotiate for artwork; monitor articles through production. Weight, 70%

2. Take responsibility for assigned articles, in consultation with the editor. Includes: Obtain solicited manuscripts; review articles; obtain outside reviews; convey recommended revisions to the author; obtain revised articles. Weight, 25%

3. Perform other editorial functions as needed. Includes: Review feature articles, letters to the editor, and other editorial matter as requested; provide editorial support through staff discussions, and offering suggestions for articles and stories. Weight, 5%

QUALIFICATIONS: Graduate level training in physics or other physical science; several years' experience in editing or writing for a scientific or technical magazine; ability to meet deadlines; ability to work well with others, both inside and outside the magazine.

PHYSICS TODAY

from Stephen G. Benka

Jeff, As we discussed, as of today we are shifting your job tasks slightly:

Actual editing goes from a weight of 80% to 70%.

Following up on solicited articles goes from 15% to 25%.

—Steve
8/25/97

D00302

2 September 1997

Steve --

Thank you for responding to my note of 18 August 1997, in which I ask for more work -- specifically, more feature-article manuscripts that I can edit for publication in the magazine ahead of deadline. I was dismayed to find that instead of welcoming my request, your response focuses on assigning blame for the lack of such manuscripts and goes on to deny that we have any such deficiency.

You base the first part of your response on the fact that Physics Today staff members do follow-up work with the people whom you have invited to write articles for the magazine. You note that these staff members are therefore "in part" responsible for obtaining manuscripts that are ready to edit for publication. All this is true, but our severe shortage of such manuscripts is not due to deficient solicitation follow-up work by the staff as you imply. The article editors on the staff have, in fact, done a good job of following up on solicited articles -- staying in contact with the authors and working with them to produce the articles that you have asked them to write. If you think you could do better than we do, you should share your secret. For whatever it is worth, my experience is that when a conscientious and hardworking staff is blamed for a long-standing problem, the diagnosis is usually incorrect, and an incorrect diagnosis is an impediment to a real solution. (In my own case, according to my job description, solicitation follow-up has been a small part of my job; but I work at it conscientiously, and on my latest annual review you said that I do above-average work in this area.)

No, the problem is not your staff's lack of competence in its follow-up work with authors. The problem is simply that the magazine has solicited far too few articles. This has had unfortunate consequences, not only for the staff (as my note of 18 August 1997 describes for my case), but also for the magazine's subscribers. In the past three years I doubt that we have had even three months in which we have had a backlog of manuscripts ready to edit. Typically, the editor scrapes each issue together in a near-crisis atmosphere, after a desperate search around the office for manuscripts that may have arrived -- or that are said to be "in the mail." The lineup of articles in most issues of Physics Today is thus dictated by forces beyond our control.

Your listing of manuscripts that you say you offered to me begs the question of giving me more manuscripts that I can edit and prepare for publication, because we did not have the manuscripts on your list. In your own words, they were "in late stages of development." I should point out that even manuscripts that you consider ready to edit often are not. And when the shortage of manuscripts forces us to schedule incomplete manuscripts for near-term publication, we often have to pressure authors to work with us under undo

time pressure. This is unfair to both the author and the Physics Today staff, because it deprives them of the opportunity to do their best and therefore most satisfying work. The largest group to suffer, of course, are the readers. I don't know how many of the articles that you listed fell into that category, because I did not work on those articles.

As I said in my memo of 18 August 1997, I think article editing work is done most efficiently when it is done well ahead of the deadline. So in general I seek to work in advance and am reluctant to take on articles that, due to the shortage, will necessarily have to be done at the last minute, often after I have already scheduled work on other articles and often well after any reasonable deadline for submission. Month after month our work should not consist of "rush jobs" for issues that are upon us. I would have taken on the articles in your list if they had been scheduled for later issues -- or, even better, if they had not yet been scheduled for specific issues. But because of our serious lack of manuscripts, it has almost never been possible to work ahead.

In your response you say that I "agreed" to obtain William Colson's article by a particular date. This cannot be true. There is no way that I or any other Physics Today staff member could credibly "agree" that Colson and his coauthors would finish writing their article by a date that you picked arbitrarily. Only Colson and his coauthors -- all volunteers, remember -- could do that, and they did not. We cannot suddenly and unilaterally spring a short deadline on an author. The most we can do is ask our authors if they can meet such a deadline. Over the years you have asked many authors whether or not they could meet particular deadlines that you had in mind, and you have accepted later deadlines when they told you what they could do. Just because you are now talking to a staff member, rather than directly to the author, doesn't mean you can "just say article" and have it appear.

In the final paragraph of your response to my request for manuscripts, you boast: "I can supply you with as many as you want." This is simply not true. In fact, when we spoke after I received your response, you could not supply even one manuscript that I could edit for the January issue, the February issue or any subsequent issue. Of course, we will eventually come up with something to fill the holes in those issues. But, as usual, that is not likely to happen soon enough to allow us to work ahead. I am sure we could continue to pretend that this modus operandi is not a serious problem -- after all, we have managed to get by with it for a number of years. But it takes an unnecessary toll on many people, and so I think we have a moral responsibility to the staff (article editors, editorial assistants, art editor and copy editors), authors and

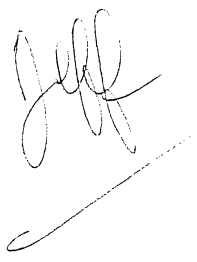
readers to solve the problem. I think the obvious first step is to admit that we do have a serious shortage of manuscripts and that the shortage leads to the problems that I have described here and in my note of 18 August 1997.

As I mentioned above, solicitation follow-up work has been only a small part of my job -- at least that is what I thought. When I saw how much you emphasized it in your response to my note, I took a look at my job description and noticed that such work was a bigger part of my job than I had remembered. Upon further investigation, however, I discovered that you had altered my job description after the fact to add truth to your claim. Indeed, the altered job description was dated 19 August 1997, the same date carried by your response to my note. For future reference, let me say here that I and other members of the staff prefer an above-board management style, where, for example, important changes are pointed out to people rather than being left for them to discover -- or, perhaps, not discover. In any case, you and I discussed the change in my job description on 25 August 1997, and I agreed to it. Thus, I will increase my solicitation follow-up work by about 2/3 and reduce my article editing by 1 part in 8. (I will continue to spend the large majority of my time on article editing.) Because of my preference for doing things above-board, I asked you to write me a note describing the change in my job description, and I thank you for doing so.

For the record: In your response to my note, you say that you OK'd my request for paternity leave. My recollection is that you neither approved it nor denied it, because I withdrew my request before you responded.

So that we don't wander too far from the original issue, let me repeat that I made my 18 August 1997 request because I felt that I was being held responsible for a particular amount of work (my annual article-editing goal) while being made to work so inefficiently that I could not do that amount of work -- at least not with sufficient time left over to take some time off. My revised job description will lessen slightly my need for ready-to-edit articles, and so should provide some relief in this area.

The Riordan manuscript has just arrived, and I would like to work on it now, so as to finish it as far ahead of the deadline as possible. Unless you tell me otherwise, that is what I will do. Perhaps I will take some vacation time later, depending in part on what other work comes in.



Jeff,

September 26, 1997

We welcome constructive and productive contributions from you, but behavior by you that we consider destructive and counterproductive will no longer be tolerated. Your continued interruption at our retreat, after you were instructed to hold your questions and comments until the discussion segment of the agenda, is an example of what we mean. The continuation of such behavior on your part, in the office or at any work-related activity, will not be tolerated.

This notice is to be treated as confidential.

October 1, 1997:

Charles and I went to Jeff's office about 11:45am, when Charles verbally delivered the message contained in the above notice, then handed Jeff a signed copy of the notice.

Following the staff articles meeting (2-3:30pm), Charles and Jeff had a lengthy conversation in Jeff's office.

At about 6pm, Jeff came to my office, noted that Charles had had me "in tow," and asked if I "had the same level of enthusiasm" as Charles did about the message we had delivered. I told him I wouldn't characterize either of us as enthusiastic, but we were in agreement.

General Rules of Conduct

As we are all aware, rules and regulations are essential to the general safety and welfare of our employees and to the efficient operation of the Institute. The following rules have been established for everyone's guidance while employed at AIP. This list of rules is not intended to be all-inclusive, since it is impossible to determine all the circumstances which may arise. However, these rules will provide illustrative standards by which employees should conduct themselves.

The procedure for handling discipline may include verbal warning, written warning, suspension without pay, and termination of employment. However, some situations may require immediate termination.

The following are examples of unauthorized behavior:

- Insubordination
- Foul or abusive language
- Use or possession of intoxicants or illegal drugs on or off AIP's premises during work hours; reporting to work while under the influence of intoxicants or illegal drugs
- Sleeping on the job
- Fighting on the job or the threat of bodily harm to others while on the job
- Misuse of or damage to Institute material or equipment or to the material or equipment of another employee
- Unauthorized removal of property belonging to the Institute or another employee
- Carelessness endangering the safety of oneself or others
- Constant pattern of tardiness or absenteeism without authorization
- Misbehavior including but not limited to: horseplay, harassing or intimidating fellow employees, making malicious or derogatory statements about fellow employees or about the Institute, misuse of confidential information, falsifying records, and illegal conduct
- Violation of safety or other operating rules. A positive attitude for the safety of your fellow employees and yourself must be observed at all times. This includes using proper safety equipment and reporting any unsafe practice to your supervisor

- Carrying or possessing weapons of any kind on Institute property
- Parking in non-designated areas
- Unauthorized use of Institute telephones
- Solicitation of any kind by an employee of another employee while either is on working time
- Inappropriate dress
- All employees of AIP are employed at-will. Accordingly, employees may be terminated at anytime, with or without cause and with or without notice.

Electronic Communications Policy

The Institute's e-mail system is normally for business use only. Electronic communications should have a business purpose and may not be used to solicit for religious or political causes, outside organizations or other personal matters unrelated to the business of the Institute. Employees should be aware that the Institute may access electronic communications at any time for any reason.

Staff of the Institute may access its electronic communications systems without notice to users; reasons for such access include (but are not limited to): routine system maintenance, prevention or investigation of alleged misuse of its systems, and assuring compliance with software copyright laws.

The Institute's policy prohibiting harassment applies to the use of the Institute's electronic communications systems.

Employees who violate the Institute's electronic communications policy may be disciplined, up to and including termination.

9/20/97

Jeff,

We welcome constructive and productive contributions from you, but behavior by you that we consider destructive and counterproductive will no longer be tolerated. Your continued interruption at our retreat, after you were instructed to hold your questions and comments until the discussion segment of the agenda, is an example of what we mean. The continuation of such behavior on your part, in the office or at any work-related activity, will not be tolerated.

This notice is to be treated as confidential.

ch

PHYSICS TODAY February 13, 1997

PERFORMANCE REVIEW 1997

Employee Name: Jeff Schmidt
Division: Physics Today Manager: Steve Benka
Job Title: Senior Associate Editor
Reporting to: Editor
PERIOD: Feb 1996-Jan 1997 (PT issues March '96-Feb '97)

Overall Rating: 4

Major Responsibility 1: Edit articles

Weight: 80% Rating: 4.0 Rating: 320

Component tasks:

1. Edit articles for content (including art), clarity, organization, length, readability, house style, grammar, spelling and impact. Do this in conjunction with authors and the editor, and so as to meet editorial deadlines.
2. See articles through production. This includes obtaining or performing revisions, proofreading, preparing layouts and checking bluelines, all so as to meet editorial deadlines.

Comments: Jeff is a thorough and professional editor. He edited 15 feature articles in this period, one shy of his agreed upon goal of 16. One of them (ITER debate, June '96) was very difficult to produce and was assigned to him at a late date. He did a fine job with that one, and with all of them. His articles are generally ready on time and often they are early. Jeff was also instrumental in streamlining the articles-editing process within PT.

Major Responsibility 2: Take responsibility for assigned articles

Weight: 15% Rating: 3.5 Rating: 52.5

Component tasks:
In consultation with the editor:

1. Contact authors to obtain outlines and manuscripts.
2. Contact referees for advice on outlines and manuscripts.
3. Evaluate outlines and manuscripts, in conjunction with the editor and referee. Give feedback to the author, to develop an appropriate article.

Comments: Jeff has expressed a desire to always have at least one article ready to edit. He has also gotten involved at much earlier stages in the articles-acquisition process.

Major Responsibility 3: Support the editorial effort of PT

Weight: 5% Rating: 3.0 Rating: 15

Component tasks:

1. Read submitted manuscripts (feature articles, letters and opinion pieces) at request of the editor and provide a review with regard to the suitability of the manuscript for publication.
2. Attend and participate in staff meetings to develop ideas for articles, news stories, special issues, etc.
3. Submit ideas for feature articles and news stories.

Comments:
Jeff's reviews are often insightful and useful, but they are not always prompt. His comments in meetings often provide a useful counterpoint to discussions. He is not expected to be a major source of ideas for articles and news stories, but occasionally has ideas with merit.

Appraiser's comments: Jeff is an excellent editor, and handles even the difficult assignments well. His comments and views on editorial ideas and policies are generally insightful.

Jeff needs to increase his article output in 1997 to at least 16, and preferably 18. He also needs to return his manuscript reviews promptly.

OVERALL RATING: 4.0 **OVERALL SCORE:** 387.5

Employee's Comments:

SIGNATURES:

Employee: J. Schmidt Date: 13 Feb. 97

Appraiser: Steve Benka Date: 2/13/97

Both the appraiser and the employee must sign and date the form. The employee's signature does not necessarily represent agreement with the review but that he/she has seen the form and participated in the performance appraisal.

H.R. Review:.....Date:.....

AMERICAN INSTITUTE OF PHYSICS
PAYROLL AUTHORIZATION FORM B

EMPLOYEE: JEFFREY SCHMIDT DIVISION: PHYSICS TODAY
EMP. NO. 1437 SSN: [redacted]

REMARKS: ANNUAL REVIEW

SALARY CHANGE INFORMATION:

Position Title	GRADE	Current Range	Effective	Next Review
SR ASSOC EDITOR	E08	47150.00 - 62600.00 - 78050.00	3/1/97	3/1/98

Previous Salary	Amount of Increase	New Salary	Percent Increase
62400.00	2600	65,000	4.2

Quartile: 2 Overall Rating: 4

Steve Benka — Recommending Party
ceh — Authorized Approval
Personnel

TITLE CHANGE INFORMATION

From: SR ASSOC EDITOR To: Effective:

New Grade: New Range: $

Division Head
Personnel

TRANSFER

From: PHYSICS TODAY To:

Effective Date:

Division Head
Division Head
Personnel

MISCELLANEOUS REMARKS:

MAR/REV:JPW

D00311

From: Stephen Benka
To: JSCHMIDT, bgl
Date: 2/14/97 5:24pm
Subject: Thought you'd like to know

Jeff, Barbara,

I just got a visit from my PhD advisor, who had a major complaint about about December issue. The Sikivie and Amato articles were "too damn good" and he spent far too much time with the magazine.

I thought you'd like to know. Kudos to you both.

--Steve

AMERICAN INSTITUTE OF PHYSICS
PAYROLL AUTHORIZATION FORM B

EMPLOYEE: JEFFREY SCHMIDT DIVISION: PHYSICS TODAY
EMP. NO. 1437 SSN: [redacted]

REMARKS: ANNUAL REVIEW

SALARY CHANGE INFORMATION:

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Steve Benka — Recommending Party
ceh JSL — Authorized Approval
Personnel

TITLE CHANGE INFORMATION

From: SR ASSOC EDITOR To: Effective:

New Grade: New Range: $

Division Head
Personnel

TRANSFER

From: PHYSICS TODAY To:

Effective Date:

Division Head
Division Head
Personnel

MISCELLANEOUS REMARKS:

MAR/REV:JPW

D00313

10 March 1997

Steve —

As planned, I will be on vacation for 15 working days beginning tomorrow (11 March — 31 March). Most of the time I will be in DC; I'll leave my phone numbers with Rita.

Jeff

D00314

Jeff: Spurred by your review, we are planning to publish Weinstock's letter [①]; Ferguson [②] suggests we read his response [③] and consider publishing neither. What think you?
/Paul
21 July 97

From: Harry Ferguson <ferguson@stsci.edu>
To: ACP.AIP(pelliot)
Date: 7/28/97 10:37am
Subject: Reply to Weinstock letter

Dear Paul,

Here is our reply to the letter to the editor. Actually, we wouldn't recommend publishing either the letter or our reply, as this sort of basic question about light travel times seems a bit out of place for your letters section. Perhaps you should forward our reply to Dr. Weinstock directly and see if that satisfies him? ②

Sincerely,
Harry Ferguson

SB: Weinstock letter below, followed by Ferguson reply. Ferguson recommends we not publish either. So does Chas. Jeff says otherwise — see next page. I suggest we ask Weinstock if the answer suffices for him; he may feel publication exposes his lack of understanding of cosmology. What say you?
Paul
8/13/97

① Weinstock Letter to the Editor

In *Probing the Faintest Galaxies,* by Henry Ferguson, Robert Williams and Lennox Cowie (PHYSICS TODAY, April, page 24), the figure 1 caption reads, in part, *For most of the galaxies in the image, we are looking back more than half the age of the universe.*

This claim seems strange to me. Radiation emitted so long ago must have had its source so close to Earth at the moment of emission*according to the generally assumed Big Bang origin of the currently expanding universe*that it would have reached Earth, if at all, well before the era of telescopes, spectrometers and, of course, us. That this is so springs from the fact that no source can recede from the earth at a speed greater than that of the radiation*namely, c. A simple calculation, in fact, shows that we are looking back through less than half the age of the universe. Can it be that Ferguson et al. are using an erroneous relation between emitter distance and doppler-shift measurement?

If there is something wrong with my analysis, I shall be grateful to have it explained to me.

> @SIGNATURE = ROBERT WEINSTOCK
> @ADDRESS = (zweinstock@oberlin.edu)
> @ADDRESS = Oberlin College
> @ADDRESS = Oberlin, Ohio
>

③ Ferguson et al. reply

The redshift distribution of the galaxies in the HDF is not known precisely, however, a very conservative guess based on Keck spectroscopy of the brighter galaxies and the colors of the fainter galaxies is that more that half the galaxies have redshifts z > 0.8.

The statement made in the caption of figure 1 comes from a

calculation of lookback time to a galaxy at z = 0.8. For a critical-density universe with a cosmological constant lambda = 0, the lookback time is

tau = 2/3 H_0^-1 (1-1/(1+z)^(3/2))

and the present age of the universe is

t_0 = 2/3 H_0^-1

where H_0 is the Hubble constant.

For this cosmology, a galaxy at z = 0.8 has tau = 0.6 * t_0. In other words the lookback time is more than half the present age of the universe.

A general expression for the lookback time with arbitrary values of the cosmological constant and density parameter is given in Carroll et al., 1992, Ann. Rev. Astron. Astrophys., 30, 499 (equation 16).

Henry Ferguson
Robert Williams
Lennox Cowie

Paul —

Weinstock's question should get a physical explanation as an answer, not a mathematical one like this. — say drop the mathematical one, don't just add the physical one to it. Perhaps ask Ferguson & Co. to write what they would say to a (or radio audience)
high-school ~~student who asked this seeming~~ contradiction. One possible reason that Fergie & Co. answered as they did is that they don't really understand the physics.

-Jeff
28Jul97

Jeff's suspicion of incompetence is totally without foundation. Our

PHYSICS TODAY

from Stephen G. Benka

Paul,

Forward Ferguson's response to Weinstock. We won't publish either the letter or the response.

—Steve 8/14/97

D00317

28 July 1997

Steve —

I would like to take a vacation beginning 1 September 1997, using 30 vacation days. (This replaces my earlier requests.) I will edit the article by Martin Perl for the October issue and the article by Ian Ross (and possibly the article by Michael Riordan) for the December issue.

Jeff

OK, assuming you have enough vacation days available. I understand that your start date of 1 Sept. is flexible
– Steve 8/4/97

cc: Jeff, Susan

Job Description

August 19, 1997

Name: Jeff Schmidt
Title: Senior Associate Editor
Reports to: Editor, Physics Today

BRIEF DESCRIPTION OF JOB DUTIES: Take responsibility for and edit feature articles.

ESSENTIAL FUNCTIONS:

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2. Take responsibility for assigned articles, in consultation with the editor. Includes: Obtain solicited manuscripts; review articles; obtain outside reviews; convey recommended revisions to the author; obtain revised articles. Weight, 25%

3. Perform other editorial functions as needed. Includes: Review feature articles, letters to the editor, and other editorial matter as requested; provide editorial support through staff discussions, and offering suggestions for articles and stories. Weight, 5%

QUALIFICATIONS: Graduate level training in physics or other physical science; several years' experience in editing or writing for a scientific or technical magazine; ability to meet deadlines; ability to work well with others, both inside and outside the magazine.

found on copier 11/8/99

PHYSICS TODAY February 13, 1997
PERFORMANCE REVIEW 1997 notes of October 22, 1997

Employee Name: Jeff Schmidt
Division: Physics Today Manager: Steve Benka
Job Title: Senior Associate Editor
Reporting to: Editor
PERIOD: Feb 1996-Jan 1997 (PT issues March '96-Feb '97)

Overall Rating: 4 (drop to 2-2.5 for disruptive behavior)

Major Responsibility 1: Edit articles

Weight: 80% Rating: 4.0 Rating: 320

Component tasks:

1. Edit articles for content (including art), clarity, organization, length, readability, house style, grammar, spelling and impact. Do this in conjunction with authors and the editor, and so as to meet editorial deadlines.
2. See articles through production. This includes obtaining or performing revisions, proofreading, preparing layouts and checking bluelines, all so as to meet editorial deadlines.

Comments: Jeff is a thorough and professional editor. He edited 15 feature articles in this period, one shy of his agreed upon goal of 16. One of them (ITER debate, June '96) was very difficult to produce and was assigned to him at a late date. He did a fine job with that one, and with all of them. His articles are generally ready on time and often they are early. Jeff was also instrumental in streamlining the articles-editing process within PT.

(His editing is considered mediocre by our new, higher standards. He doesn't communicate his progress consistently to the editor.

Major Responsibility 2: Take responsibility for assigned articles

Weight: 15% Rating: 3.5 Rating: 52.5

Component tasks:
In consultation with the editor:

1. Contact authors to obtain outlines and manuscripts.
2. Contact referees for advice on outlines and manuscripts.
3. Evaluate outlines and manuscripts, in conjunction with the editor and referee. Give feedback to the author, to develop an appropriate article.

Comments: Jeff has expressed a desire to always have at least one article ready to edit. He has also gotten involved at much earlier stages in the articles-acquisition process.
(He's ok, but not enthusiastic.)

Major Responsibility 3: Support the editorial effort of PT

Weight: 5% Rating: 3.0 Rating: 15

Component tasks:

1. Read submitted manuscripts (feature articles, letters and opinion pieces) at request of the editor and provide a review with regard to the suitability of the manuscript for publication.
2. Attend and participate in staff meetings to develop ideas for articles, news stories, special issues, etc.
3. Submit ideas for feature articles and news stories.

Comments:
Jeff's reviews are often insightful and useful, but they are not always prompt. His comments in meetings often provide a useful counterpoint to discussions. He is not expected to be a major source of ideas for articles and news stories, but occasionally has ideas with merit.
(His frequesntly disruptive behavior at meetings, and his divisive influence on the staff have had a very serious negative effect on morale throughout the department. He shows his lack of interest in participating by, e.g., working on articles during staff meetings.)

Appraiser's comments: Jeff is an excellent editor, and handles even the difficult assignments well. His comments and views on editorial ideas and policies are generally insightful.

Jeff needs to increase his article output in 1997 to at least 16, and preferably 18. He also needs to return his manuscript reviews promptly.

(He must not only put an end to his disruptive and divisive behavior, but work actively to promote unity among the staff and management.)

OVERALL RATING: 4.0 (2-ish) OVERALL SCORE: 387.5(??)

Employee's Comments:

SIGNATURES:

Employee:.....Date:.....

Appraiser:.....Date:.....

Both the appraiser and the employee must sign and date the form. The employee's signature does not necessarily represent agreement with the review but that he/she has seen the form and participated in the performance appraisal.

H.R. Review:.....Date:.....

5 November 1997

Steve —

As we discussed, during the first three weeks of December I would like to take as much vacation time as I can and still keep up with my article-editing work. I would work from afar to meet my commitments indicated on the attached schedule, and perhaps do more than that.

Jeff

OK. As we discussed, at least one week of this time will be vacation.

—Steve 11/5/97

cc: Jeff, Susan

D00323

PHYSICS TODAY

tentative SCHEDULE OF ARTICLES (ever-evolving) ~~October 22~~ November 5, 1997

(**Articles in Bold Face** are required by the editorial calendar)

January 1998	**Mourou — Ultra-High-Power Laser Pulses**	**Tech**	**JS**
	Neitzel — When Liquids Stay Dry	Tech	CD
	Sokolsky — Highest Energy Cosmic Rays	Tech	BMS
February 1998	Blanpied — Science and Policy in 1947	Hist	IG
(Only 3 will run)	Goldstein — Quantum Theory without Observers(I)	Tech	JS
	Gehrels — The New Gamma-Ray Astronomy	Tech	CD
	Auciello — Ferroelectric Thin Films	**Tech**	**??**
March 1998	Goldstein — Quantum Theory without Observers(II)	Tech	JS
	Hallock — ^{3}He Floating on ^{4}He	Tech	??
April 1998	Liebfried et al. — The Wigner Function	Tech	GPC
	Ramaty — Origin of the Light Elements	Tech	JS
	Snyder — Light Guiding Light	Tech	JS
	Segev — Self-Trapping of Optical Beams	Tech	JS
	Heeger — Metallic & Semiconducting Polymers	Tech	JS
May 1998	**Happy Birthday to Us — PT's 50th Anniversary**	**Spec. Iss.**	**GBL**
June 1998	Perryman — Measuring the Heavens with Hipparcos	Tech	??
July 1998	**Busch-Vishniac — Trends in Sensors/Actuators**	**Semi-Tech**	**??**

D00324

From: Jeff Schmidt
To: sbenka
Date: 1/22/98 6:11pm
Subject: Heeger review

Steve --

We finally have a review of the Heeger manuscript. Unfortunately, as you will see below, it is highly negative. This is consistent with the tone that I think Richard Friend would have taken if he had actually written the review that he promised. I say this because Friend seemed very critical of the manuscript in a couple of brief conversations that I had with him when I called to try to extract the review.

-- Jeff

From: Stephen Benka
To: bgl, jeff
Date: 1/22/98 6:47pm
Subject: Heeger review -Forwarded

Barbara, Jeff,

Here are my initial thoughts on Heeger, now that we have [redacted] review (attached, for Barbara).

My inclination is to write Heeger a letter, asking if he is willing to start from scratch on a new article. I'll remind him of the wording in our original solicitation letter to him:

"I am delighted that you will write an article for *Physics Today* on semiconducting and metallic polymers. As I mentioned earlier, the article should be written so as to reach the nonspecialist, be balanced and fair to various research efforts worldwide. At a minimum, the article should describe what conducting polymers are, where they can be applied, what the difficulties and challenges are, and what progress is being made. I feel certain that many of our readers will appreciate such an article. "

and point out that he didn't deliver. If he's not willing to start over completely, we'll understand (and perhaps prefer that!).

Alternatively, I could first call him, and sound him out on a revision, relaying the gist of the reviewer's comments. This might save us some time if he chooses to drop the idea.

Alternatively, we could just reject the article and the author outright.

What say you?

--Steve

From: Jeff Schmidt
To: ACP.ACPGate("bgl@worldnet.att.net"), SBENKA
Date: 1/22/98 7:00pm
Subject: Heeger review -Forwarded -Reply

Steve, Barbara --

My first thought is that it would be difficult to convey the extent of the reviewer's criticism over the phone. It might sound to Heeger like less criticism than it really is. One approach might be to send Heeger the review by e-mail (with the reviewer's name removed, of course), and ask him to tell us whether or not (don't forget the "or not") he wishes to take on a complete rewrite.

Jeff

CC: jschmidt

From: Jeff Schmidt
To: ACP.AIP(SBENKA), AIP_NY.AIPGate("jschmidt@aip.org"...
Date: 1/23/98 1:16pm
Subject: Heeger -Reply

Steve, Barbara --

I think Barbara's idea would work well. That is, send the review by e-mail with a note saying that we'll call tomorrow (or Monday) to discuss the matter.

-- Jeff

From: Stephen Benka
To: jeff
Date: 12/1/97 11:34am
Subject: Priorities

Jeff,

I received your note of 26 November. Susan is the Assistant to the Editor, which is a full time job. Charles, myself, and other editors all handle our own correspondence. I suggest you try doing the same.

--Steve

CC: sfunk, charris, sbenka

From: Susan Funk
To: SBENKA
Date: 12/1/97 11:40am
Subject: Priorities -Reply

Steve, Thank you for your vote of confidence! But, may I suggest that you say something to Rita because Jeff left her the folder with the letters to "hold on to." She asked me if I knew anything about it, but it seems she's now burdened with that project. I think if you or Charles handle this situation it would be a big stress reliever for all.
Susan

From: Stephen Benka
To: rita
Date: 12/1/97 11:44am
Subject: Priorities -Forwarded

Rita,

This is a message I just sent to Jeff, with copies to Susan and Charles. I should have copied you as well. Please let me know if Jeff approaches you with this task. Thanks.

--Steve

26 Nov. 97

Steve ——

I am making good progress on the two Goldstein articles, the Monroe article, the Ramaty revision request, the Heeger second reviewer and other articles and I will have a few things ready for Susan to do her usual work on, such as Fed Ex labels, letters and the like. She isn't sure how important these things are relative to the various other things that she does, and I don't know either, but we thought that maybe you could say. Specifically, letters and Fed Ex labels for the above-mentioned articles are available for Susan to work on at this time. You can let her know what priority to give these things, and she can then let me know. Thanks,

– Jeff

From: Charles Harris, Steve Benka (Charles Harris) (Charles Harris)
To: JSCHMIDT
Date: 12/2/97 12:30pm
Subject: rescindment

As agreed in the last staff meeting, our mutual acceptance of a code of behavior supersedes any outstanding verbal or written reprimand to you or any member of the staff for any perceived violation of this code. Onward and upward!

Warren complained ~~to~~ to Charles about being asked to do more and more, and was very agitated. (This, according to Charles.) When Charles got him calmed down, it came out that Jeff had talked to Warren about extra workloads (after I [SB] had asked Jeff again if he would do some of his own keyboarding).

In Warren's review and performance plan, I had asked him to take over (from Rita) the correspondence with publishers. Warren had reluctantly agreed. Now, Jeff apparently indicated to Warren that there would be no end to the new demands placed on him, so he (Warren) stormed over to Charles to complain.

[I believe this was in December 1997. —SB 6/1/98]

D00330

January 28, 1998 SB

At about 6:30 pm I saw Jeff and Toni in Toni's office with the door closed. Recalling the counsel of Human Resources, I opened the door, went in, asked what aspect of their work they were discussing, and offered to join in. They were obviously startled, but Toni said they were talking about Monica Lewinsky and an article about her from the Wall Street Journal that Jeff had brought in, and also about the how to manage the 400 pages of tables that were being generated for the special issue.

So we chatted for a few minutes about the White House situation. As for the tables, I said we needed to identify the material in this first step. Pulling it all together would come later. "Let's get this work done first."

At one point during this Lewinsky/special issue discussion, Toni spoke into the phone, telling Jean that she would call her back later. It was only then I realized Jean had been part of the closed-door discussion before I entered.

I then steered the talk back to work, asking Jeff about his articles. Toni turned back to her work on the special issue, and I suggested to Jeff that we leave Toni in peace. Back by my office, Jeff told me he had given both of his March articles to Paul today, and should have them back by 4 February. We also discussed the Ramaty and deKee articles, and I made some changes to the April and June lineups, which Jeff was happy with. Jeff then went back to his office.

A few minutes later, I walked by his office and saw him on the phone. I thought about that while in the bathroom. Since the March articles were in-house at the moment, and both deKee and Ramaty were unlikely to be in their offices in the Eastern time zone, I was curious which of his authors he was talking with. So I opened his door and asked.

He said it wasn't an author, but "one of my coworkers." Again I offered to join the conversation, having assumed it was work-related. Jeff spoke into the phone, asking Toni if she heard that. I expressed surprise that they needed to discuss work by phone, and invited Toni down the hall. There was some delay before she arrived (saying goddbye to Jean?) and I let Jeff steer me out of his office into the open area.

I asked what the topic of conversation was that they felt I needed to be excluded from. They were not forthcoming. I said that closed-door meetings such as I had just seen made me uncomfortable, that we didn't want a repeat of "what happened last year," which involved a lot of such "clandestine" gatherings. I said I failed to understand what work-related topics couldn't be discussed openly, to the point of needing an office-to-office phone call. "Do you think I shouldn't know, or don't have the right to know what's going on in the office?" Jeff said he didn't know if I had the right or not. I assured him I did. Toni said she wanted the Q&As reinstated.

Toni said, "Let's assume that we all know what you mean by 'what happened last year.' I want you to know that I'm really not interested in the politics around here. I spend all my time working, it's all I can do to keep up with that." I assured her that I knew how hard she worked, and reminded her that I've told her many times how happy I am with her work.

Jeff wondered if everyone was being "monitored" the same way [that I was presumably monitoring him], and Toni said she didn't like being subjected to such "surveillance." Jeff asked several times if Charles "approved" of what I was doing. I told him to ask Charles. There followed many examples of closed-door sessions (e.g. me and Charles, Gloria and me, etc.) and of personal phone calls. I pointed out that in most cases, a manager or supervisor was involved. I made it clear that I was addressing the behavior I had just seen, and repeated that it made me

uncomfortable because of last year's events. I then turned to Jeff and addressed him directly, saying "I hadn't noticed such closed door meetings lately. It hadn't really been a problem. Until today, Jeff."

Jeff then began peppering me with questions: Is this a new policy? Shouldn't it be given to everyone? Does Charles approve of this? and so on. I began to get flustered, emphasized that my point about their gathering had been made, and walked away. Jeff's parting shot was "I think it should be a general policy." I answered with, "I know that you do, Jeff. Thank you."

From: Stephen Benka
To: jeff
Date: 2/5/98 8:15pm
Subject: Sullivan & Barth

Jeff,

I've gone through both articles, and left them on your chair with my notes.

I think they make a great package for our readers. Thanks for your help getting them done in time.

--Steve

PHYSICS TODAY February 11, 1998
PERFORMANCE REVIEW 1998

Employee Name: Jeff Schmidt
Division: Physics Today
Job Title: Senior Associate Editor
Reports to: Editor
PERIOD: Feb 1997-Jan 1998 (PT issues March '97-Feb '98)

Overall Rating: (drop to 2-2.5 for disruptive behavior)

Major Responsibility 1: Edit articles

Weight: 76% Rating: ~~2.5~~ 3.0 Score: ~~190~~ 228

Comments: Jeff's articles are generally ready on time and often they are ~~early.~~ His productivity, however, slipped for the second year in a row, and others had to compensate. (He edited ~~14~~ 15 feature articles in this period, one shy of his original goal of 16. This counts Goldstein, which will appear in two parts in March and April, as ~~a single~~ two article. Seven months into this review period, we made an adjustment (reflected in the above weight) because of his imminent fatherhood that effectively reduced his goal to 15.) He declined several articles that were offered to him to edit (including Fink, Cohn, Jeanloz, Kasap, and a second one for the October special issue).

Jeff's editing ~~was very uneven~~ ranging from very good (as with Perl, who praised Jeff's work) through mediocre (Crabtree, Nelson) to very poor (Mourou's article was very sloppily done, and the Editor corrected many substantive errors of physics and notation that Jeff should have spotted). Overall, Jeff fell short of Physics Today's new, higher standards. His tendency is to simply correct in some fashion what the author submits. This is fine if the author is a capable writer, but when rewriting is called for (as the Editor called for in the introduction to the Harris article -- July '97, p36), Jeff has not delivered.

Major Responsibility 2: Take responsibility for assigned articles

Weight: 19% Rating: 3.5 Score: 66.5

Comments: Jeff seems to have improved in this area of his job, and regularly nudges authors and reviewers whose items are still pending. Nevertheless, those items still don't materialize in ~~reasonable timeframes.~~

Major Responsibility 3: Support the editorial effort of PT
Weight: 5% Rating: 1.0 Score: 5.0

Comments:
Jeff's reviews of manuscripts have been completed more promptly than in the past, but there is still room for improvement. His reviews, however, have been less helpful than in the past. For example, in his review of one Letter to the Editor, he suggested that the authors of the Hubble Deep Field article (April '97) didn't know their physics.

Jeff was asked by the Editor to handle his own correspondence with authors, as is done by all other articles editors. He did. Jeff was asked by the Editor to voluntarily do some of his own keyboarding of editorial changes, as is done by all other articles editors. He ~~refused.~~ has not.

His comments in meetings and elsewhere at work have come to have a negative impact at the magazine, often encouraging divisions among the staff---spreading dissent with some and intimidating others---and causing rifts with management. During this review period, Jeff was given a formal reprimand for his disruptive behavior, which does not support the editorial effort of Physics Today.

Appraiser's comments: Jeff is a capable editor, who is capable of doing more than he has. ~~He devoted much energy to managerial matters during this review period, to the detriment of the office environment. He needs to devote that energy to the job for which he was hired ---~~ acquiring and editing articles. The slight adjustment to Jeff's productivity that we made to accomodate his circumstances cannot be continued. He needs to produce 18 high-quality articles in the next review period, rewriting text as needed, and doing all of his own keyboarding; he is capable of producing 20 or more. The articles must be consistent with the magazine's standards of accuracy, readability, brevity, and visual appeal.

In addition, Jeff's interactions with all staff members and with management must at all times be consistent with, and actively promote a collegial, cohesive, professional working environment for all.

OVERALL RATING: 2.5 OVERALL SCORE: 261.5

Employee's Comments:

SIGNATURES:

Employee:.....Date:.....

Appraiser:.....Date:.....

Both the appraiser and the employee must sign and date the form. The employee's signature does not necessarily represent agreement with the review but that he/she has seen the form and participated in the performance appraisal.

H.R. Review:.....Date:.....

PHYSICS TODAY February 16, 1998
PERFORMANCE REVIEW 1998

Employee Name: Jeff Schmidt
Division: Physics Today
Job Title: Senior Associate Editor
Reports to: Editor
PERIOD: Feb 1997-Jan 1998 (PT issues March '97-Feb '98)

Overall Rating: (drop to 2-2.5 for disruptive behavior)

Major Responsibility 1: Edit articles

Weight: 76% Rating: 3.0 Score: 228

Comments: Jeff's articles are generally ready on time and often they are early; this is greatly appreciated. Seven months into this review period, we made an adjustment (reflected in the above weight) because of his imminent fatherhood that effectively reduced his production goal from 16 to 15, and he met his revised goal. This counts Goldstein, which will appear in two parts in March and April, as two articles. He declined several articles that were offered to him to edit (including Fink, Cohn, Jeanloz, Kasap, and a second one for the October special issue).

Jeff's editing ranged from very good (as with Perl, who praised Jeff's work) through average (Crabtree, Nelson) to poor (Mourou's article was very sloppily done, and the Editor corrected many substantive errors of physics and notation that Jeff should have spotted).

Major Responsibility 2: Take responsibility for assigned articles

Weight: 19% Rating: 3.5 Score: 66.5

Comments: Jeff seems to have improved in this area of his job, and regularly nudges authors and reviewers whose items are still pending.

Major Responsibility 3: Support the editorial effort of PT
Weight: 5% Rating: 1.0 Score: 5.0

Comments:
Jeff's reviews of manuscripts have been completed more promptly than in the past, but there is still room for improvement. His reviews, however, have been less helpful to the Editor than in the past. For example, in his review of one Letter to the Editor, he suggested that the authors of the Hubble Deep Field article (April '97) didn't know their physics, which calls his judgement into question.

Jeff was asked by the Editor to handle his own correspondence with authors, as is done by all other articles editors, and he did. Jeff was also asked by the Editor to do some of his own keyboarding of editorial changes, as is done by all other articles editors, but to date he has not.

Some of his comments in meetings and elsewhere at work have come to have a negative impact at the magazine, often encouraging divisions among the staff---spreading dissent with some and intimidating others---and causing rifts with management. An example is his refusal to judge the editing abilities of job candidates from a common test assignment. During this review period, Jeff was given a formal reprimand for his disruptive behavior, which does not support the editorial effort of Physics Today.

Appraiser's comments and Performance Plan: Jeff is a capable editor, who is capable of doing more than he has. The slight adjustment to Jeff's productivity that we made to accomodate his circumstances must be reversed, to ask as much of him as is asked of others on the staff. In the next review period, he needs to produce 18 high-quality articles, rewriting text as needed, handling his own correspondence and doing all of his own keyboarding; he is capable of producing 20 or more articles. The articles must be consistent with the magazine's standards of accuracy, readability, brevity, and visual appeal.

In addition, Jeff's interactions with all staff members and with management must at all times be consistent with, and actively promote a collegial, cohesive, professional working environment for all.

OVERALL RATING: 2.5 OVERALL SCORE: 261.5

Employee's Comments:

SIGNATURES:

Employee:.....Date:.....

Appraiser:.....Date:.....

Both the appraiser and the employee must sign and date the form. The employee's signature does not necessarily represent agreement with the review but that he/she has seen the form and participated in the performance appraisal.

H.R. Review:.....Date:.....

PHYSICS TODAY
PERFORMANCE REVIEW 1998

February 16, 1998

77

Employee Name: Jeff Schmidt Job Title: Senior Associate Editor
Division: Physics Today Reports to: Editor
PERIOD: Feb 1997-Jan 1998 (PT issues March '97-Feb '98)

Major Responsibility 1: Edit articles

Weight: 76% Rating: 3.0 Score: 228

Component tasks:

1. Edit articles for content (including art), clarity, organization, length, readability, house style, grammar, spelling and impact. Do this in conjunction with authors and the editor, and so as to meet editorial deadlines.
2. See articles through production. This includes obtaining or performing revisions, proofreading, preparing layouts and checking bluelines, all so as to meet editorial deadlines.

Comments: Jeff's articles are generally ready on time and often. For this review period, he was asked to produce 16--18 articles. Seven months into this review period, we made an adjustment (reflected in the above weight) because of his imminent fatherhood that effectively reduced his production minimum from 16 to 15, and he met this revised goal. (This counts the two-part Goldstein article (Mar & Apr '98) as two articles, both completed within this period.) He declined several articles that were offered to him for editing (including Fink, Cohn, Jeanloz, Kasap, and a second one for the October special issue).

His work ranged from very good (as with Perl, who praised the editing) through average (Crabtree, Nelson) to poor (the Mourou article had a number of substantive errors of physics and notation, which should have been spotted by Jeff but had to be corrected by the Editor).

Major Responsibility 2: Take responsibility for assigned articles

Weight: 19% Rating: 3.5 Score: 66.5

Component tasks:

In consultation with the editor:

1. Contact authors to obtain outlines and manuscripts.
2. Contact referees for advice on outlines and manuscripts.
3. Evaluate outlines and manuscripts, in conjunction with the editor and referee. Give feedback to the author, to develop an appropriate article.

Comments: Jeff did well in this area of his job, and regularly nudged authors and reviewers whose items were pending.

10%? per TB

Major Responsibility 3: Support the editorial effort of PT

Weight: 5% Rating: 2.0 Score: 10.0

Component tasks:

1. Read submitted manuscripts (feature articles, letters and opinion pieces) at request of Editor and provide a review with regard to the suitability of the manuscript for publication.
2. Attend and participate in staff meetings to develop ideas for articles, news stories, special issues, etc.
3. Submit ideas for feature articles and news stories.

Comments: Jeff's reviews of manuscripts have been completed more promptly than in the past, although they were somewhat less helpful. In his review of one Letter to the Editor, for example, he showed questionable judgement in his assessment of the physics competence of the authors of the Hubble Deep Field article (April '97). Another example that his contributions to the overall editorial effort of Physics Today slipped during this period, is his decision not to help judge the editing abilities of job candidates from a common test assignment, judging them all equally qualified. Not being a reporter, he is still not expected to be a major source of article and story ideas.

per C.H

Appraiser's comments and Performance Plan: Over the last few years, Physics Today has been undergoing a number of changes -- including raising levels of productivity, editorial quality and graphic design. Jeff is very capable of meeting these new demands. At the request of the Editor, Jeff did begin to handle his own correspondence with authors, as is done by all other articles editors. He has not yet begun to do his own keyboarding of editorial changes, as is done by all other articles editors.

In the next review period, he is expected to produce 18 high-quality articles, editing and rewriting text as needed, handling his own correspondence and doing all of his own keyboarding. The articles must be consistent with the magazine's standards of accuracy, readability, brevity, and visual appeal.

In addition, he is expected to provide helpful support to the overall editorial effort of the magazine.

OVERALL RATING: 3.0 **OVERALL SCORE:** ~~299.5~~ 304.5

From: Charles Harris
To: SBENKA
Date: 3/19/98 1:41pm
Subject: Jeff's PR -Reply

PHYSICS TODAY February 16, 1998
PERFORMANCE REVIEW 1998

Employee Name: Jeff Schmidt
Division: Physics Today
Job Title: Senior Associate Editor
Reports to: Editor
PERIOD: Feb 1997-Jan 1998 (PT issues March '97-Feb '98)

Major Responsibility 1: Edit articles

Weight: 76% Rating: 3.0 Score: 228

Comments: Articles are generally ready on time and often early. An agreed production goal of 15 articles was met. Editing ranged from very good (as with Perl, who praised the editing) through average (Crabtree, Nelson) to poor (the Mourou article had a number of substantive errors of physics and notation, which should have been spotted by Jeff but had to be corrected by the Editor).

Major Responsibility 2: Take responsibility for assigned articles

Weight: 19% Rating: 3.5 Score: 66.5

Comments: Jeff showed much improvement in this area. He regularly nudged authors and reviewers whose items were pending.

Major Responsibility 3: Support the editorial effort of PT

Weight: 5% Rating: ~~1.0~~ 2 Score: ~~5.0~~ 10

Comments:
Reviews of manuscripts were completed more promptly than in the past, although they were somewhat less helpful. In his review of one Letter to the Editor, for example, he showed questionable judgement in his assessment of the physics competence of the authors of the Hubble Deep Field article (April '97).

At the request of the Editor, Jeff did begin to handle his own correspondence with authors, as is done by all other articles editors. He has not yet begun to do his own keyboarding of editorial changes, as is done and expected by all other articles editors.

Appraiser's comments and Performance Plan: Over the last few years, Physics Today has been undergoing a number of changes -- raising levels of productivity, editorial quality and graphic design. Jeff is very capable of meeting these new demands. In the next review period, he is expected to produce 18 high-quality articles, rewriting text as needed, handling his own correspondence and doing all of his own keyboarding. The articles must be consistent with the magazine's standards of accuracy, readability, brevity, and visual appeal.

In addition, Jeff's interactions with all staff members and with management must at all times be consistent with, and actively promote a collegial, cohesive, professional working environment for all.

OVERALL RATING: **3.0** **OVERALL SCORE: 299.5**

304.5

From: Stephen Benka
To: charris
Subject: Jeff's PR

PHYSICS TODAY February 16, 1998
PERFORMANCE REVIEW 1998

Employee Name: Jeff Schmidt
Division: Physics Today
Job Title: Senior Associate Editor
Reports to: Editor
PERIOD: Feb 1997-Jan 1998 (PT issues March '97-Feb '98)

Major Responsibility 1: Edit articles

Weight: 76% Rating: 3.0 Score: 228

Comments: Jeff's articles are generally ready on time and often they are early; this is greatly appreciated. Seven months into this review period, we made an adjustment (reflected in the above weight) because of his imminent fatherhood that effectively reduced his production goal from 16 to 15, and he met his revised goal. This counts Goldstein, which will appear in two parts in March and April, as two articles. He declined several articles that were offered to him to edit (including Fink, Cohn, Jeanloz, Kasap, and a second one for the October special issue).

Jeff's editing ranged from very good (as with Perl, who praised Jeff's work) through average (Crabtree, Nelson) to poor (Mourou's article was very sloppily done, and the Editor corrected many substantive errors of physics and notation that Jeff should have spotted).

Major Responsibility 2: Take responsibility for assigned articles

Weight: 19% Rating: 3.5 Score: 66.5

Comments: Jeff seems to have improved in this area of his job, and regularly nudges authors and reviewers whose items are still pending.

Major Responsibility 3: Support the editorial effort of PT

Weight: 5% Rating: 1.0 Score: 5.0

Comments:
Jeff's reviews of manuscripts have been completed more promptly than in the past, but there is still room for improvement. His reviews, however, have been less helpful to the Editor than in the past. For example, in his review of one Letter to the Editor, he suggested that the authors of the

Hubble Deep Field article (April '97) didn't know their physics, which calls his judgement into question.

Jeff was asked by the Editor to handle his own correspondence with authors, as is done by all other articles editors, and he did. Jeff was also asked by the Editor to do some of his own keyboarding of editorial changes, as is done by all other articles editors, but to date he has not.

Some of his comments in meetings and elsewhere at work have come to have a negative impact at the magazine, often encouraging divisions among the staff---spreading dissent with some and intimidating others---and causing rifts with management. An example is his refusal to judge the editing abilities of job candidates from a common test assignment. During this review period, Jeff was given a formal reprimand for his disruptive behavior, which does not support the editorial effort of Physics Today.

Appraiser's comments and Performance Plan: Jeff is a capable editor, who is capable of doing more than he has. The slight adjustment to Jeff's productivity that we made to accomodate his circumstances must be reversed, to ask as much of him as is asked of others on the staff. In the next review period, he needs to produce 18 high-quality articles, rewriting text as needed, handling his own correspondence and doing all of his own keyboarding; he is capable of producing 20 or more articles. The articles must be consistent with the magazine's standards of accuracy, readability, brevity, and visual appeal.

In addition, Jeff's interactions with all staff members and with management must at all times be consistent with, and actively promote a collegial, cohesive, professional working environment for all.

OVERALL RATING: 3.0 OVERALL SCORE: 299.5

3/16/98 Jeff told SB (a) the revised Bering article arrived & looks good

(b) Dekee is "ready to edit," he has everything he needs. He'll have it for June.

(c) He got our comments back to Busch-Vishniac but hasn't heard back. He'll call her soon. The article is for our July editorial calendar, I said.

(d) He got our comments back to Hemley, but hasn't heard back.

(e) He has a plan for ~~the~~ shortening the Segev article, that he can implement without their assistance (except on the figures). I urged him to do as much as possible without involving the authors — it has been a nightmare for them (and us — me), and asking for another iteration could have them hating PT for life.

(f) He asked about his performance review. I said it would be completed this cycle, but we would be a little late — I might sit down with him this Friday (20 March) or else next Monday or Tuesday.

(g) He said he would meet his deadline for the May excerpts.

D00346

— Steve

Pentagon's account, outlays for Federal science and technology would come to about $45 billion, an amount suggested by a National Academy of Sciences report in 1996 as an alternative measure of the government's true investment in research.

IRWIN GOODWIN

1/9/98
Conv. w/ Terri B.

Jeff's review was
More indepth last year, for a 4.

Review is weak, for dropping a whole point.

Last ## needs specifics to hold up, or remove it — Jeff will use it for "whistle blowing" to advisory committee. (e.g. email

Goal last year was 16-18, "changed to 15"
Back to 18.

Comments vague on overall effort @ PT

Use same component tasks

strengthen our nation for the new century by expanding our commitment to discovery—increasing our support of science. pressing our progress in the war against cancer, protecting our children from public health dangers." He reminded his listeners that the year Truman addressed the AAAS, the transistor was invented and the ENIAC computer had just been operated.

Clinton evoked the loudest applause, however, when he thanked Gibbons for his work as science adviser and head of OSTP and then named his new science team. Gibbons's "ability to build bipartisan coalitions on contentious issues freom nuclear testing to cloning to climate change has strengthened our nation immeasurably," said Clinton. As for Lane, Clinton enthused, "Neal has placed the National Science Foundation at the center of our science and technology policy in many ways." And Colwell, said the President, "will maintain that momentum."

Gibbons, for his part, had let the White House know soon after Clinton's second inauguration that he wanted to retire. In fact, he had told a group of science writers in January 1997 that he had sent a list of his possible successors to the White House. While he waited for a response, nothing happened. Meanwhile, Gibbons traveled to Russia, China, Japan and other lands on scientific missions for the Clinton Administration. Even when rumors of Gibbons's replacement

Conv. w/ Z

3/20/98 Terri spoke with Marc re Jeff.

Marc wants us to say in the review that Jeff's disruptive behavior was forgiven. Terri and I think that's not a good idea, but it should be mentioned in talking with Jeff — and the talks documented.

Marc's mtg w/ Jeff went ok, though Jeff didn't agree w/ decision and was disappointed Marc hadn't talked w/ Jean Kumagai. Jeff says it is A/P policy "to train all employees in AA every year." Terri says we train all new employees during orientation. She needs to see that all employees are trained once, then all new ones as they come in, and change the policy's wording.

Marc (according to Terri) ~~confronted~~ mentioned Jeff's disruptive behavior at staff meetings. Jeff claimed that any "disruptions" were for only "ten seconds" — that "the staff wouldn't allow it to continue for days."

D00350

Association for the Advancement of Science, which was observing its 150th anniversary. He had accepted the offer to address the AAAS when he was told that President Truman had spoken before the organization 50 years earlier and promised to establish NSF after first opposing the concept (see PHYSICS TODAY, February, page 34). The occasion fit Clinton's belated discovery of a new priority for his Administration—scientific research. After saying almost nothing about science in his first term, he redeemed himself with a series of events and talks. One of his early efforts was his remarks before he awarded the Medals of Science and Technology last December (see PHYSICS TODAY, February, page 55). So far this year, he has spoken about the promise of science in his State of the Union message, in speeches in San Francisco and the Los Alamos National Laboratory, at the AAAS and in the White House on 6 March when he brought Cambridge University physicist Stephen Hawking to regale some 150 invited guests.

At the conference in Philadelphia, Clinton displayed uncustomary eloquence: "Today, at the edge of a new century, the dawn of a new millenium, at a sunlit moment of prosperity for our people, we see before us an era of unparalleled possibilities. Our restless quest for knowledge, which has been one of America's defining traits since we got started right here in Philadelphia, will quicken. . . . We must seize this moment to

From: Charles Harris
To: SBENKA
Date: 3/20/98 8:10am
Subject: Jeff's PR, revised per Terri. -Reply

Steve,

In general, fine. I'm not comfortable with the line about Jeff evaluating candidates for the job. that is not part of his job description and each editor should have the option to participate or not. perhaps i can call you from the road later today.

ceh

PHYSICS TODAY February 16, 1998
PERFORMANCE REVIEW 1998

Employee Name: Jeff Schmidt Job Title: Senior Associate Editor
Division: Physics Today Reports to: Editor
PERIOD: Feb 1997-Jan 1998 (PT issues March '97-Feb '98)

Major Responsibility 1: Edit articles
Weight: 76% Rating: 3.0 Score: 228
Component tasks:

1. Edit articles for content (including art), clarity, organization, length, readability, house style, grammar, spelling and impact. Do this in conjunction with authors and the editor, and so as to meet editorial deadlines.

2. See articles through production. This includes obtaining or performing revisions, proofreading, preparing layouts and checking bluelines, all so as to meet editorial deadlines.

Comments: Jeff's articles are generally ready on time and often early. For this review period, he was asked to produce 16--18 articles. Seven months into this review period, we made an adjustment (reflected in the above weight) because of his imminent fatherhood that effectively reduced his production minimum from 16 to 15, and he met this revised goal. (This counts the two-part Goldstein article (Mar & Apr '98) as two articles, both completed within this period.) He declined several articles that were offered to him for editing (including Fink, Cohn, Jeanloz, Kasap, and a second one for the October special issue).

His work ranged from very good (as with Perl, who praised the editing) through average (Crabtree, Nelson) to poor (the Mourou article had a number of substantive errors of physics and notation, which should have been spotted by Jeff but had to be corrected by the Editor).

Major Responsibility 2: Take responsibility for assigned articles

Weight: 19% Rating: 3.5 Score: 66.5

Component tasks:

In consultation with the editor:

1. Contact authors to obtain outlines and manuscripts.
2. Contact referees for advice on outlines and manuscripts.
3. Evaluate outlines and manuscripts, in conjunction with the editor and referee. Give feedback to the author, to develop an appropriate article.

Comments: Jeff did well in this area of his job, and regularly nudged authors and reviewers whose items were pending.

Major Responsibility 3: Support the editorial effort of PT

Weight: 5% Rating: 2.0 Score: 10.0

Component tasks:

1. Read submitted manuscripts (feature articles, letters and opinion pieces) at request of Editor and provide a review with regard to the suitability of the manuscript for publication.
2. Attend and participate in staff meetings to develop ideas for articles, news stories, special issues, etc.
3. Submit ideas for feature articles and news stories.

Comments: Jeff's reviews of manuscripts have been completed more promptly than in the past, although they were somewhat less helpful. In his review of one Letter to the Editor, for example, he showed questionable judgement in his assessment of the physics competence of the authors of the Hubble Deep Field article (April '97).

Appraiser's comments and Performance Plan: Over the last few years, Physics Today has been undergoing a number of changes -- including raising levels of productivity, editorial quality and graphic design. Jeff is very capable of meeting these new demands. At the request of the Editor, Jeff did begin to handle his own correspondence with authors, as is done by all other articles editors. He has not yet begun to do his own keyboarding of editorial changes, as is done by all other articles editors.

In the next review period, he is expected to produce 18 high-quality articles, editing and rewriting text as needed, handling his own correspondence and doing all of his own keyboarding. The articles must be consistent with the magazine's standards of accuracy, readability, brevity, and visual appeal.

In addition, he is expected to provide helpful support to the overall editorial effort of the magazine.

OVERALL RATING: 3.0 OVERALL SCORE: 299.5

PHYSICS TODAY March 12, 1998
PERFORMANCE REVIEW 1998

Employee Name:	Jeff Schmidt	Job Title:	Senior Associate Editor
Division:	Physics Today	Reports to:	Editor
PERIOD:	Feb 1997-Jan 1998 (PT issues March '97-Feb '98)		

Major Responsibility 1: Edit articles

Weight: 76% Rating: 3.0 Score: 228

Component tasks:

1. Edit articles for content (including art), clarity, organization, length, readability, house style, grammar, spelling and impact. Do this in conjunction with authors and the editor, and so as to meet editorial deadlines.
2. See articles through production. This includes obtaining or performing revisions, proofreading, preparing layouts and checking bluelines, all so as to meet editorial deadlines.

Comments: Jeff's articles are generally ready on time and are often early. For this review period, he was asked to produce 16–18 articles. Seven months into this review period, we made an adjustment (reflected in the above weight) because of his imminent fatherhood that effectively reduced his production minimum from 16 to 15, and he met this revised goal. (This counts the two-part Goldstein article (Mar & Apr '98) as two articles, both completed within this period.) He declined several articles that were offered to him for editing (including Fink, Cohn, Jeanloz, Kasap, and a second one for the October special issue).

His work ranged from very good (as with Perl, who praised the editing) through average (Crabtree, Nelson) to poor (the Mourou article had a number of substantive errors of physics and notation, which should have been spotted by Jeff but had to be corrected by the Editor).

Major Responsibility 2: Take responsibility for assigned articles

Weight: 19% Rating: 3.5 Score: 66.5

Component tasks:

In consultation with the editor:

1. Contact authors to obtain outlines and manuscripts.
2. Contact referees for advice on outlines and manuscripts.
3. Evaluate outlines and manuscripts, in conjunction with the editor and referee. Give feedback to the author, to develop an appropriate article.

Comments: Jeff did well in this area of his job, and regularly nudged authors and reviewers whose items were pending.

Major Responsibility 3: Support the editorial effort of PT

Weight: 5% Rating: 2.0 Score: 10.0

Component tasks:

1. Read submitted manuscripts (feature articles, letters and opinion pieces) at request of Editor and provide a review with regard to the suitability of the manuscript for publication.
2. Attend and participate in staff meetings to develop ideas for articles, news stories, special issues, etc.
3. Submit ideas for feature articles and news stories.

Comments: Jeff's reviews of manuscripts have been completed more promptly than in the past, although they were somewhat less helpful. In his review of one Letter to the Editor, for example, he showed questionable judgement in his assessment of the physics competence of the authors of the Hubble Deep Field article (April '97). Not being a reporter, he is still not expected to be a major source of article and story ideas.

Appraiser's comments and Performance Plan: Over the last few years, Physics Today has been undergoing a number of changes—including raising levels of productivity, editorial quality and graphic design. Jeff is very capable of meeting these new demands. At the request of the Editor, Jeff did begin to handle his own correspondence with authors, as is done by all other articles editors. He has not yet begun to do his own keyboarding of editorial changes, as is done by all other articles editors.

In the next review period, he is expected to produce 18 high-quality articles, editing and rewriting text as needed, handling his own correspondence and doing all of his own keyboarding. The articles must be consistent with the magazine's standards of accuracy, readability, brevity, and visual appeal.

In addition, he is expected to provide helpful support to the overall editorial effort of the magazine.

OVERALL RATING: 3.0 OVERALL SCORE: 304.5

Employee's Comments:

SIGNATURES:

Employee:.....Date:.....

Appraiser:Steve Benka.....Date:3/23/98

Both the appraiser and the employee must sign and date the form. The employee's signature does not necessarily represent agreement with the review but that he/she has seen the form and participated in the performance appraisal.

H.R. Review:.....Date:.....

AMERICAN INSTITUTE OF PHYSICS
PAYROLL AUTHORIZATION FORM B

EMPLOYEE: JEFFREY SCHMIDT DIVISION PHYSICS TODAY
EMP. NO. 1437 SSN: [redacted]

REMARKS: ANNUAL REVIEW

SALARY CHANGE INFORMATION:

Position Title	Grade	Current Range			Effective	Next Review
SR ASSOC EDITOR	E08	48550.00	64500.00	80400.00	3/1/98	3/1/99

Previous Salary	Amount of Increase	New Salary	Percent Increase
65000.00	1500.00	66500.00	2.3%

Quartile:	Amount of Previous Increase	Previous % of Increase	Overall Rating:
3	2600.00	4.17	3.0

TITLE CHANGE INFORMATION

From: SR ASSOC EDITOR To: _____ Effective: _____

New Grade: New Range: $ _____

TRANSFER

From: PHYSICS TODAY To: _____ Effective Date: _____

Recommending Party	Authorized Approval	Personnel
Steve Burke	[signature]	
Date: 3/24/98	Date: 3/24/98	Date:

MISCELLANEOUS REMARKS:

PAF Created by:

D00357

PHYSICS TODAY March 12, 1998
PERFORMANCE REVIEW 1998

Employee Name: [illegible]midt Job Title: Senior Associate Editor
Division: Reports to: Editor
PERIOD: 3/24/98 [illegible]ch '97-Feb '98)

PHYSICS TODAY
from Stephen G. Benka

Jeff feels this review is factually incorrect, mean-spirited, punitive, and makes unreasonable demands for the future. I answered that it is an accurate assessment of his performance, and sets forth a reasonable workload for a full-time editor.

Major Responsil
Weight: 7
Component task
1. Edit a gth, readability, house s with authors and the edi
2. See forming revisions, proof to meet editorial deadl

Comments: rly. For this review period, he is review period, we made an a ninent fatherhood that effectivel iet this revised goal. (This co articles, both completed within th o him for editing (including Fink, C cial issue).

His wo ng) through average (Crab bstantive errors of physics and notat rected by the Editor).

Major Responsibility 2: [illegible] icles
Weight: 19% Rating: [illegible]
Component tasks:
In consultation with the editor:
1. Contact authors to obtain outlines and manuscripts.
2. Contact referees for advice on outlines and manuscripts.
3. Evaluate outlines and manuscripts, in conjunction with the editor and referee. Give feedback to the author, to develop an appropriate article.

Comments: Jeff did well in this area of his job, and regularly nudged authors and reviewers whose items were pending.

I asked Jeff if this was accurate and if so, I'd send the note down to HR with his review.
He said it was accurate "as far as it goes."
I don't want the review submitted until he responds

D00358
unsigned

3/24/98

Didn't think his quality of editing slipped. I told him the Monroe article convinced me that his editing can't be entrusted to just a profreader, as in the past.

Said not "imminent fatherhood" but a dearth of articles forced the adjustment.

I reminded him that he had asked for several months paternity leave — Susan had started the paperwork with HR. He had made it clear that he didn't want any more articles, not even one for the October special issue. Some weeks after his request, he withdrew it and insisted on getting some ready-to-edit articles.

He agreed this is what happened.

I told him that he well knew the articles had been reassigned to others. That he didn't have articles because he hadn't wanted any, not because of any shortage. He acknowledge that was the case.

We agreed I would change the wording from "imminent fatherhood" to something like "canceled paternity leave."

He thought the ~~article~~ review was punishment for his "organizing efforts." I asked him what he was talking about — I certainly knew of some of his disruptive and counterproductive behavior (in fact he was reprimanded for it) but I know nothing about his "organizing." Repeated that the review was punitive.

Jeff thinks we're asking too much of him — more than of the other editors. I assured him we weren't.

He said, as in the past, that he shouldn't have to keyboard, indicating that such work was for menials, not for him. I said all the other articles editors did their own keyboarding and in fact use that as an additional chance to improve the ms. He said not everyone edits in the same way. I agreed but repeated that he needs to keyboard. He again said that should be part of his job and I finally frivolously suggested he subcontract out his keyboarding. He then dropped the issue.

D00360

He said that mine was "one approach to management" but he didn't find it inspiring.

He'll write a response, won't sign review.

He wants to grow in "other directions" at PT, maybe do some reporting. I told him no way — ~~ka~~ I don't believe he has the best interests of PT or its readers at heart, and the last time he tried "reporting" only angered our neighbors at UMd.

I told him he would edit articles. If he wanted to do other things it would be at another publication, not at PT.

From: Gloria Lubkin
To: charris,sbenka
Date: 3/26/98 3:40pm

Dear Charles and Steve,

Although I asked to see Jeff's first cut at excerpting our first decade when he gave them to Warren today, he didn't give them to me. But Warren showed them to me. Jeff did not take the team approach but rather assigned Warren the task of dealing with:
our coverage of Fort Monmouth and Sen. Joe McCarthy
our coverage of the firing of Allen Astin as director of NBS

Of the eight pages here's a rough estimate of what Jeff plans (he has even created a layout, apparently):
Oppenheimer's loss of security clearance 2 pages
Manpower issues 2+ pages
Accelerators 1 page (this includes 1/2 page with Art roberts song and 1/4 page for a High Voltage Engineering ad, leaving 1/4 page for physics)
Transistor is announced 1/4 page
Feynman on quantum electrodynamics 1/4 page
Ad for 1st edition of Sears & Zemansky 1/4 page
NSF is established 1/4 page
Ft. Monmouth case and Klaus Fuchs spy case 1 page
Astin case 1/4 page

All together it looks like we would have less than 1 page of physics coverage in the first decade excerpts. I find this selection to be far too political and far from representative of what PT carried and plan to make detailed suggestions to Jeff about how to include more physics. Please let me know your feelings about this as soon as possible.

From: Jeff Schmidt
To: SBENKA, WKORNBER, GLUBKIN, RWEHRENB, PELLIOT
Date: 3/27/98 2:36am
Subject: Whereabouts . . .

On Friday 27 March I will be working on a late schedule; people should feel free to call me at home until 11 pm (or leave me a voice mail message at x3048 any time). I will be working on the 8-pages of excerpts Friday and over the weekend, and I will bring in the result on Monday. Unlike Bert, I returned Liz Fitzgerald's phone call so that she can draft an intro to the decade; I will edit it.

Jeff

CC: JSCHMIDT

From: Stephen Benka
To: jschmidt
Date: 3/27/98 6:05pm
Subject: Whereabouts . . . -Reply

Jeff,

Be sure to show me the intro blurb, preferably before you edit it. Thanks.

--Steve

>>> Jeff Schmidt 03/27/98 02:36am >>>
On Friday 27 March I will be working on a late schedule; people should feel free to call me at home until 11 pm (or leave me a voice mail message at x3048 any time). I will be working on the 8-pages of excerpts Friday and over the weekend, and I will bring in the result on Monday. Unlike Bert, I returned Liz Fitzgerald's phone call so that she can draft an intro to the decade; I will edit it.

Jeff

From: Stephen Benka
To: GCOLLINS, CDAY, TFEDER, apsdpost.GOODWIN, WKORNBER...
Date: 3/27/98 3:24pm
Subject: To those who are excerpting

This will clarify who makes the decisions about what excerpts to include or exclude.

Gloria is providing valuable oversight, looking specifically for redundancies and overkill in the excerpts, and I suggest that everyone take her advice seriously. Balance is a point of pride for Physics Today; we need to present a balanced sampler of Physics Today to our readers. Both redundancies between decades and overkill of one form or another within a decade can skew the balance; Gloria is looking for those and suggesting remedies as needed.

Each of you pitched in admirably. Without you, there would be no decadal excerpts and our celebratory issue would be very different. I believe you have earned the ownership of your decades, and thus the decisions are yours to make. As always, the editorial content of PT is subject to my final approval. I'll look for balance.

Thank you, one and all, for all your help.

--Steve

CC: glubkin, charris

(Notes of Steve Benka: March 31, 1998)

Warren had a conversation with Jeff last Wednesday, March 15, 1998, in which Warren his sense that the decade was not well balanced. Warren told Jeff that he (Warren) had gone through Jeff's decade, tightened it up editorially and freed about two full pages. Jeff told Warren that all he (Jeff) wanted from Warren was excerpts on two items, the Astin case and the Fort Monmouth case. No other input from Warren was wanted. So Warren quit. On Thursday, Warren put together a package that included his shortened versions of Jeff's excerpts, and the following note, and sent it overnight FedEx to Jeff, who would have received it Friday morning, March 27, 1998.

Jeff:

I set out to propose alterations to your layout, seeing what in my view was an imbalance and an expenditure of space on material of secondary value. In response to your insistance that I give you only the Astin and Fort Monmouth segments, of course, I stopped. Here are Astin and Monmouth plus related stuff; Included with the Monmouth extracts are several other security/loyalty linked items that, if you want the sense of what the times' concerns were, ought to go with the Fort Monmouth material, including the exchange of letters on the Klaus Fuchs arrest, the warning to scientists from Spitzer, Einstein and others about responses to Federal investigators, and the visa-related material you had with Oppenheimer. As I said, half a page for Oppenheimer, rather than a page and a half seems enough; we're not reporting the story, simply recalling it. Dropping some of that and some of the display material you employed gives us as much as two solid pages to fill. I was going to suggest material for that but, in light of the specifity of your request to me, here's my input.

w

From: Warren Kornberg
To: sbenka
Date: 3/31/98 1:18pm
Subject: ad discussed

Jeff:
I set out to propose alterations to your layout, seeing what in my view was an imbalance and an expenditure of space on material of secondary value. In response to your insistance that I give you only the Astin and Fort Monmouth segments, of course, I stopped. Here are Astin and Monmouth plus related stuff; Included with the Monmouth extracts are several other security/loyalty linked items that, if you want the sense of what the times' concerns were, ought to go with the Fort Monmouth material, including the exchange of letters on the Klaus Fuchs arrest, the warning to scientists from Spitzer, Einstein and others about responses to Federal investigators, and the visa-related material you had with Oppenheimer. As I said, half a page for Oppenheimer, rather than a page and a half seems enough; we're not reporting the story, simply recalling it. Dropping some of that and some of the display material you employed gives us as much as two solid pages to fill. I was going to suggest material for that but, in light of the specifity of your request to me, here's my input.

w

1948–1958

▼ February 1951, page 18–19

The Stockpiling and Rationing of

SCIENTIFIC MANPOWER

By Henry D. Smyth

ON December 16 the President declared a state of national emergency. Such a declaration, and the facts behind it, naturally influence all our present thoughts and plans. Some of us are filled with emotion and can think only in terms of immediate action. This is not good enough. Regardless of the outcome of the situation in Korea, this country now faces the necessity of planning not only for the coming months but for the coming decade and the decade after that. We may not have to fight a full-scale war. We profoundly hope that we shall not. But we know now that we must prepare to resist aggression with all our strength for the foreseeable future. We shall have to increase greatly the armed forces of this country, using our material resources and our manpower in the wisest possible way. In every aspect of civilian life the first concern of each citizen must be the long-range value to the country of what he is doing. In the period ahead of us, no citizen can be deferred from national service in this sense.

It is not good enough to boast that we will fight for freedom. We must think for freedom, and this is much harder. As we prepare for possible war, we shall inevitably have to delegate increasing authority over our lives and actions to the national government. At the same time we must be vigilant to maintain our fundamental rights of independent thinking, criticism, and free discussion.

The Dangers We Face

It has become clear that our survival is at stake. Not just our material survival, but our survival as a society of free men and women. If our cities are destroyed, we can rebuild them. Our spiritual destruction would be still more fearful. It is not numbers, nor buildings, nor wealth that make a people great. It is their freedom and their vigor. We might lose our freedom, we might even lose our passion for it. This could happen through armed attack and conquest by our enemies, or it could happen from our own stupidity and short-sightedness. If we are forced into a major war, we must remember that armed victory is only a means to an end and that the years after the war gauge the reality of victory. If the methods we use to win a military victory should destroy our moral position in the world, or our own self-respect, or change our free society into a totalitarian one, we shall not have won the war. On the other hand, if our hatred of war and our desire for peace lead us into the acceptance of an alien and barbaric conqueror, we shall have lost more completely. We shall then have given up our freedom and be the serfs of a police state imposed by men who neither understand nor respect the ideals that have made us great. These dangers are real and must be faced squarely. I believe we shall overcome them.

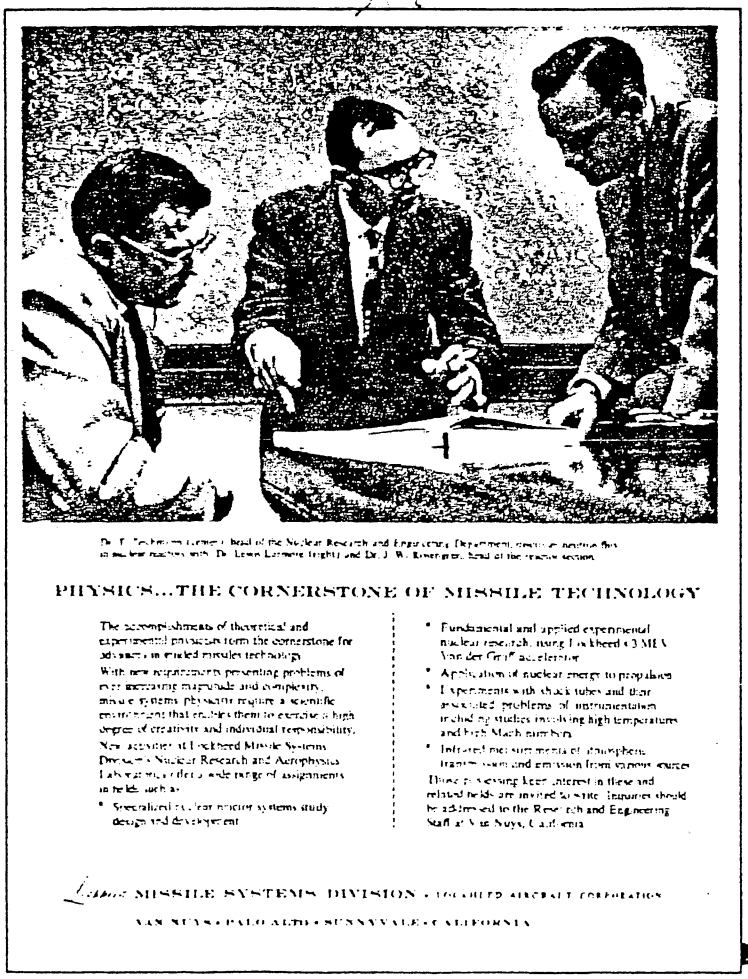
A third danger remains. We may be drawn into a war for which we are not adequately prepared and we may fight it less skillfully than it needs to be fought. It is to one phase of this specific danger that I want to address myself today.

Scientists as Tools of War

Men of science, traditionally peaceful, internationally minded, and nonpolitical, have become a major war asset. It is important that they be used to the greatest advantage. Therefore, I am asking you as representatives of science to consider carefully how you and your fellows can be most useful to our country in the years to come. I believe that we are facing dangers so great as to make the comfort and convenience of any group trivial in comparison to the contribution such a group can make to our survival. For that reason, I have chosen a somewhat grim title for this speech—"The Stockpiling and Rationing of Scientific Manpower". For that reason, I am speaking of scientists not as men who enrich our culture but as tools of war needed for the preservation of our freedom.

Atomic Energy Commissioner *H. D. Smyth*, author of the report on *Atomic Energy for Military Purposes* (more commonly known as the *Smyth Report*), was a member of the Princeton University faculty from 1924 until he accepted appointment to the AEC in 1949. He was chairman of the physics department from 1935 until the time he left Princeton, and is at present on leave of absence.

▼ June 1956, page 23



Dr. [illegible], former head of the Nuclear Research and Experimental Department, discusses neutron flux in nuclear reactors with Dr. Lewis Linsmore (right) and Dr. J. W. Rosengren, head of the reactor section.

▼ December 1951, page 29, by PT staff

Scientific Manpower

The Shortage is becoming Critical

Evidence continues to mount that the number of scientifically and technically trained people in the United States falls far short of being adequate to satisfy even the present research needs of the government, industry, and education.

During the 20th Anniversary Meeting of the American Institute of Physics in Chicago last October, it should be noted, the AIP Placement Register provided facilities for representatives of industry, government agencies, and universities to discuss employment opportunities with those physicists (about 130) who expressed any personal interest in the matter. It is significant that the available jobs listed at that time by the Placement Register outnumbered the physicists who listed themselves as being available for employment by a ratio of almost four to one.

The Los Angeles School-Industry Science Program

▼ September 1957, pages 20, 23, 24, by L. C. Van Atta

During the past school year the Hughes Aircraft Company has sent teams of lecturers into both City and County School classes.

During the summer of 1957, Hughes is employing 19 high-school teachers as a continuation and expansion of last summer's Teachers-in-Industry project. In addition the Company is employing 12 gifted students who are working as a team on a specific problem which they are expected to complete and write up during the summer. The problem is the civil defense of Los Angeles in the event of nuclear attack. The students will have a full-time supervisor and will be given orientation lectures and the necessary factual information and guidance necessary for the problem. The students will receive, in addition to a modest salary, a $400 scholarship for college.

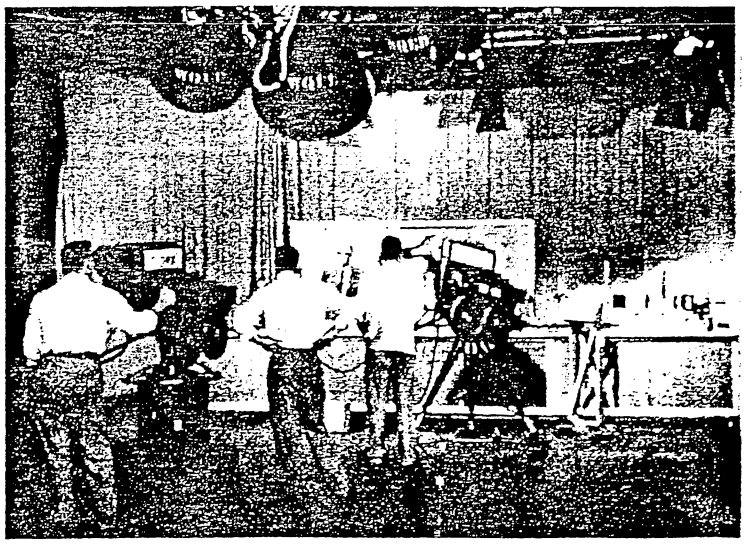
Sketches by David Smitlo

▲ November 1949, page 14–15

▼ September 1957, page 14

PHYSICS COURSE ON TV

By Harvey E. White



▼ January 1952, page 37

(2 LEFT)

NEWS and VIEWS

New Amplifier

A semi-conductor has been used for electronic amplification in the Bell Telephone Laboratories. For years the only flexible amplifier available, the vacuum tube, has been an important tool, not only in radio, telephony, and industrial control but in physical research as well. Now a fundamental study of certain problems of solid state physics has provided a new amplifier which seems suited for a variety of practical applications. Developed by John Bardeen and Walter H. Brattain under a general research program initiated and directed by William Shockley, the Transistor, as it is called, is a semi-conductor triode which can be used as an amplifier, an oscillator, and in other ways in which vacuum tubes perform.

This device, about the size of an automobile fuse, has no vacuum, no glass envelope, no grid, no plate. No warm-up time is needed to make it operate; it uses less power than a vacuum tube, can pass 25 milliwatts, operates in a range up to 10 megacycles (in the present state of the art), and is expected to have excellent life and wear resistance.

(AUG. 48, p. 22, by PT staff)

(JUN 48, p. 36)

POCONO CONFERENCE

by Richard P. Feynman

Quantum Electrodynamics

Schwinger went on to try to put these ideas on a satisfactory theoretical basis. He succeeded in identifying the terms in the theory which were giving the trouble and producing the infinite result. He then demonstrated that these terms, if they were finite, would have no other effect but to alter the mass of the electron. However we observe only the total mass of an electron and do not know what the mass would be if it had not been altered. Thus the terms, if they were finite (and they presumably would be in a correct theory were it available), would have no effect and henceforth can be safely and consistently omitted in a calculation. A major portion of the conference time was spent in hearing and discussing these results of Schwinger. They represent a real advance in our understanding of physics.

There was also presented by Feynman a theory in which the equations of electrodynamics are artificially altered so that all quantities including the inertia of the electron turn out finite. The results of this theory are in essential agreement with those of Schwinger, but they are not as complete.

(JUN 48, p. 8, 10)

NATIONAL SCIENCE FOUNDATION

LEGISLATION FAILS

The shelving of the bill for a national science foundation by the House of Representatives went almost unnoticed amid September's flurry of turbulent and weighty problems.

In his presidential address to the American Chemical Society at Atlantic City a week or so before the bill was shelved, Linus Pauling observed that it has now been four years since the persuasive recommendations of the Bush Report were submitted to the President, two years since the writing of the perhaps even more convincing Steelman Report—and still no foundation has come into being. He asked that a strong program of public education be launched to make understood the overwhelming importance of federal support of scientific research, as advocated in these two reports.

Agreeing at the same time that there is possible danger of bureaucratic domination in having basic scientific research supported exclusively or predominately by the Federal Government, Pauling suggested that this might be met by a comparable fund provided from non-Federal sources to insure that the Government would and could not be left to dominate the field by default.

(NOV. 49, p. 31, by PT staff)

NATIONAL SCIENCE FOUNDATION

COMPROMISE VERSION APPROVED

The Senate-House committee of conference on the question of the Science Foundation bill came to final agreement in late April, and in early May President Truman signed the bill aboard his special train during his "whistle-stop" tour about the country.

(JUN. 50, p. 28, by PT staff)

ACCELERATING

MORE BIG MACHINES

With 300 Mev synchrotons and synchrocyclotrons budding at scattered points over the Northeast and as energetic a betatron reported in Illinois, there can be little doubt that the springtime of Big Physics has arrived. Other large accelerators have been sighted as far north as Ontario and as far south as Oak Ridge, and from the far west come rumors of still greater wonders to come.

Columbia University's new synchrocyclotron was formally dedicated on May 2 by the University's president, General of the Army Dwight D. Eisenhower

A week or so earlier, the General Electric Company announced the successful operation in its first phase of the GE Research Laboratory's new 300 Mev "nonferromagnetic" synchroton.

Brookhaven National Laboratory has two accelerators in progress. The first is a 20 Mev cyclotron purchased from the Collins Radio Company that at present is remarkable chiefly because it is so handsomely designed, but which is also expected upon completion to be extremely useful as a research instrument. The second Brookhaven machine is the giant proton-synchrotron (the "cosmotron"), which, it is predicted, will reach energies as high as 2.5 or 3 billion volts.

From Stanford University has come word that tests of the fifteen foot prototype model of a projected billion volt electron linear accelerator have given encouraging results.

(JUL 50, P. 35, 36, by PT staff)

(MAY 48, p. 28)

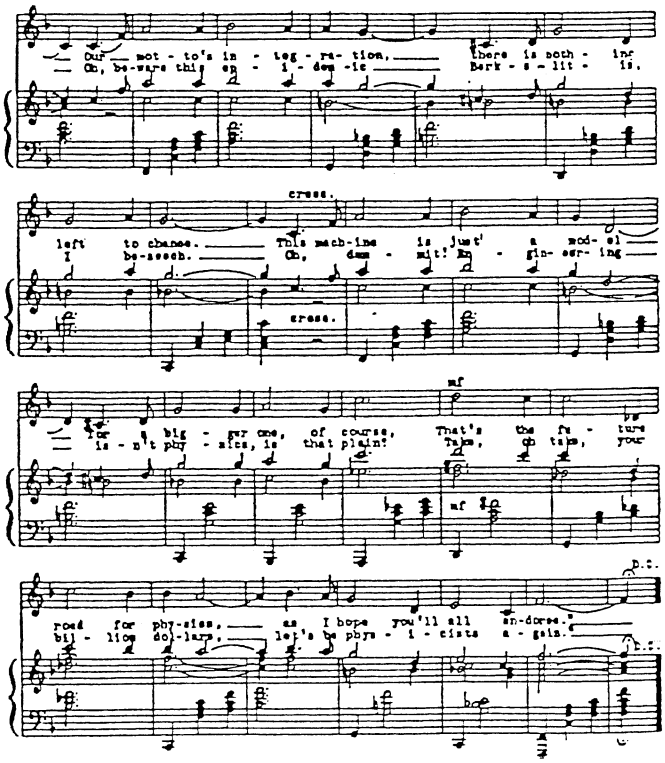
TAKE AWAY YOUR BILLION DOLLARS

by Arthur Roberts

The merry and somewhat irreverent comment on big operations in physics, which appears on the following pages, was first played at a small farewell party for Arthur Roberts just before he left Cambridge.

"Take Away Your Billion Dollars" was written in 1946 "at a time when it seemed as though every physicist was inventing, building, or projecting a new and larger machine, and while plans for the Brookhaven Laboratory were being formulated," Roberts writes (from Brookhaven, where he was working this summer).

"The AEC was not yet in existence, and all financing for new machines was being thought of as from the Armed Forces. This appeared to many people a dangerous situation. . . . I was impressed by the number of people who thought that it was aimed at them. Incidentally, in 1946, ten billion volts still seemed like an astronomical figure."



(NOV, 48, P. 17, 21)

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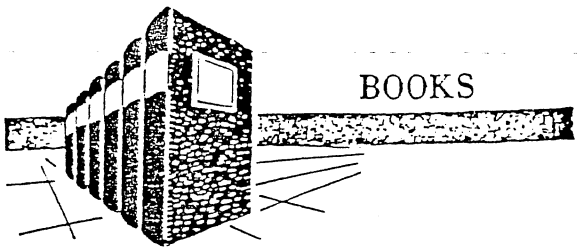


WASHINGTON WITCH HUNT. By Bert Andrews. 218 pp. Random House, New York City, 1948. $2.50.

Physicists and scientists will find this book, by Bert Andrews of the New York Herald Tribune, worth reading if for no other reason than that one of their colleagues—Dr. E. U. Condon—is the subject of one of the five chapters.

Perhaps the crux of the attacks is the concept of guilt by association, in Dr. Condon's case of alleged association with certain individuals who are suspect because they, in turn, are alleged to have associated with other individuals who are alleged to be sinister.

The dilemma confronting us is obvious. On the one hand, the nation fears Communist infiltration and is determined to root out every trace of it. On the other hand, we wish to maintain constitutional democracy and the concomitant rights of the individual.

The apparent 'practical' solution of the dilemma is the sacrifice of the individual. What this means in terms of human injustice and suffering, of the establishment of an insidious pattern, and of what may only too easily be successive encroachments on human rights, leading to a sham democracy, is largely ignored. The danger that we have embarked upon a sequence of steps in this direction, blindly and blithely aping the totalitarian states, remains unperceived.

(SEPT. 48, p. 26, by Hugh Odishaw)

(JUL 48, p. 30)

Dirac Denied Visa

NOBEL LAUREATE P. A. M. Dirac, Lucasian professor of mathematics at Cambridge University, is reported to have been denied permission to enter the United States. Dirac, who has been in this country several times in recent years, was invited to come to Princeton this year as a visiting physicist at the Institute for Advanced Study, which is directed by J. R. Oppenheimer. On May 26th Dirac said that his visa application had been "turned down flat" under the terms of Section 212 A of the Immigration and Naturalization Act, a lengthy list of reasons for denying entry that covers categories of undesirables ranging from vagrants to stowaways.

His exclusion was protested vigorously in a letter to the editor of *The New York Times* of June 3rd which was signed by three Princeton physicists, W. Bleakney, J. A. Wheeler, and M. G. White. Their letter said, in part, "We do not pretend to be experts in the law which governs the issuance of visas. However, if this is what the McCarran Act means in practice, it seems to us a form of organized cultural suicide.

On June 10th it was reported that the State Department had ordered a review of the decision. Said the *Times:* "One of the factors contributing to the ruling against Professor Dirac, it is understood, was the 'atmosphere' in this country. This appeared to indicate that an application that might have been approved a few years ago might be rejected today."

(JUL. 54, p. 7, by PT staff)

Statement on Visa Situation

Approved by Physical Society Council

The following statement was approved by the Council of the American Physical Society at its meeting in St. Louis, Missouri, on November 28, 1952.

"In the past few years, the progress of American physics has been impeded by United States visa and passport restrictions. A few American scientists have been denied passports and many distinguished foreign scientists have failed to receive United States visas even for short visits to attend scientific meetings.

"The Council of the American Physical Society is not questioning the propriety of excluding any person who wishes admission to this country with any idea of advancing communism here. However, the Council strongly urges a more realistic approach by the authorities to the problem of travel restrictions so that free scientific interchange will not be impeded."

(FEB. 53, p. 22)

Notice!

All employers of young scientists are urgently advised to prepare themselves *immediately* to handle draft cases. Men who clearly should be classified II-A are being inducted through failure of their employers to learn the regulations and take the necessary steps in time.

Be sure to submit *before classification* a request for deferred classification in writing for all cases covered by the regulations. This action is necessary to establish the right to appeal. Appeals must be made in writing within ten days of classification. Write letters. Don't wait for forms.

D00372

(DEC. 48, p. 34, by PT staff)

The Astin Case

A packaged mixture of epsom salt and Glauber's salt, with a pinch of barium sulfate and other unidentified substances in minute quantity, has rocked the scientific community, created a new political uproar in Washington, and led to the forced resignation of the Director of the National Bureau of Standards, a man whose considerable scientific contributions to the nation during his 23-year career in government service are a matter of public record. The product in question, a commercial preparation advertised as capable of prolonging the useful life expectancy of lead storage batteries, had originally been the subject of a controversy only between the manufacturer and the Bureau of Standards, which had declared the mixture to be useless for the purposes claimed. By March of this year, however, it had become the center of a storm involving not only the original parties to the dispute, but also the Secretary of the Department of Commerce and numerous members of Congress.

Allen V. Astin, 49-year-old physicist who joined the Bureau as a research associate in 1930 and later served as chief of the NBS Electronics Division before being appointed Director by former President Truman in October 1951, submitted his letter of resignation to the White House last March 30th, pointing out that he had been informed by Craig R. Sheaffer, Assistant Secretary of Commerce for Domestic Affairs, that Secretary of Commerce Sinclair Weeks planned to study and possibly reorient some of the operations of the Bureau. and in that connection would like to have a man of his own choosing in charge of NBS. President Eisenhower accepted the resignation two days later, stating that it would become effective April 18th.

On March 31st Mr. Weeks informed the Select Committee on Small Business of the U. S. Senate that one of the reasons for deciding to change the Bureau's administration was that NBS had not been sufficiently objective in its manner of dealing with the case of the battery preparation, an "additive" marketed under the name AD-X2 by Pioneers, Inc., of Oakland, California.

(MAY 53, p. 20, by PT staff)

NBS Director Reinstated

On August 21st, one hundred and forty-four stormy days after the forced resignation of Allen V. Astin as director of the National Bureau of Standards (see *Physics Today*, VI, 5, *20*, May 1953), Secretary of Commerce Sinclair Weeks issued the following press release:

> "I have asked Dr. Allen V. Astin to continue as Director of the National Bureau of Standards and he has agreed to do so. I am taking this action because I am convinced that it is in the best interests of the Bureau and the public.

(OCT. 53, p. 18, by PT staff)

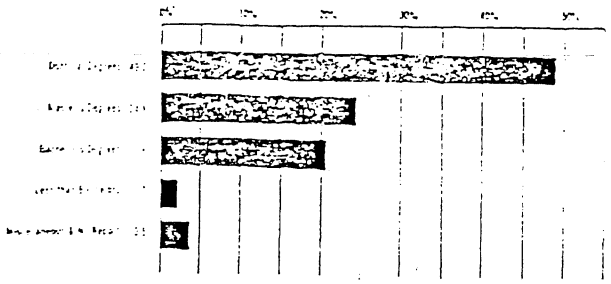


Fig. 3. Educational training of physicists.

The educational background of the physicists in the current Register is shown in Fig. 3. The distribution of these classes is not greatly different from the corresponding groups in the 1951 survey. In both cases it is probable that the AIP population is heavily weighted with senior physicists with the PhD degree. Some estimates would indicate that less than a third of the country's professional physicists hold doctorate degrees.

(JAN 56, p. 34, 35, by Marsh W. White)

International

The spirit of world cooperation in science that was to epitomize the International Geophysical Year sagged ominously last month in the wake of IGY's most spectacular achievement. The Soviet Union, amid a competitive flurry of H-bomb testing and ICBM rattling, announced early in October that it had launched a first (and remarkably heavy) artificial orbital satellite as one of its contributions to the IGY program—and thus secured an immense propaganda victory and an implied technological advantage over the West.

(NOV. 57, p. 42, by PT staff)

(JAN. 56, p. 2)

30 Mar. 98

Possible additional items for 1948–1957

Nuclear rocket	May 49
Touch tones Bell Labs ad	Feb. 50
Bk & Cf discovered	May. 50
Shockley on holes & electrons	Oct. 50
Einstein book review by Morrison	Nov. 50
Nuclear airplane	Jun. 51
Nuclear data released	Sept. 51
Cosmotron up to 2 GeV	Jul. 52
New computers	Jul. 52
H-bomb test?	Oct. 52
Atomic power	Dec. 52
V particle found	Aug. 53
Printed circuits	Dec. 53
Bevatron launched	May 54
Phone answering machine (Bell Labs ad)	Nov. (?) 54
Anti-proton found	Dec. 55
Farofsky & Phillips book rev. by Morse	Jun. 56

D00374

4 LEFT

In the Name of Security

The Bombardment of Fort Monmouth

Fort Monmouth has suddenly been labelled before the world as a center of Communist espionage.

The staff of professional scientists and engineers is largely civilian, and Fort Monmouth has had its share of difficulty in hiring adequately trained research specialists. The existing shortage of scientists and engineers has been partly to blame, but there is also the unenticing fact that the bulk of the Signal Corps' research at its own laboratories is classified. A scientist who accepts a position to do research on military gadgetry at a weapons research establishment such as Fort Monmouth must reconcile himself, in most cases, to a kind of professional retirement in which his freedom to publish his results or present papers at meetings of technical societies will be materially more restricted than if he had taken a job in academic or industrial research.

Such personnel troubles, while serious enough for those struggling to maintain the nation's technological security, are now overshadowed by threats of an acute famine of scientific manpower at Fort Monmouth. The present crisis has involved the suspension of some 30 members of the civilian staff, a set of hearings before a Congressional investigating committee, and a popularized but seemingly unsubstantiated impression that an active espionage ring is now operating inside Fort Monmouth.

On October 6th, the Army disclosed that several civilian staff members had been suspended for security reasons. Two days later Senator Joseph McCarthy went to New Jersey to take personal charge of inquiries then being conducted at Fort Monmouth by his Senate Permanent Subcommittee on Investigations. On October 12th, McCarthy said that his staff had unearthed a situation at the Laboratories that "has all the earmarks of extremely dangerous espionage. If it develops it may envelop the entire Signal Corps."

The Senate investigation, held behind closed doors, continued for about one month. Senator McCarthy held frequent press conferences and in many cases gave detailed accounts of the testimony. No witnesses were identified by name, and the Senator was careful to note that "the fact that witnesses are called by us should not reflect on them. Some are good, loyal Americans who are giving us important information." While many witnesses were reported to have used the 5th Amendment in refusing to answer questions, it was made clear that they were not currently employed at Fort Monmouth. As the investigation progressed, numerous references were made to witnesses said to have been friends, acquaintances, or contacts of Julius Rosenberg, who, according to Senator McCarthy, had organized an espionage ring in the Signal Corps. The Senator's remarks were widely reported in the press, accompanied by sensational headlines implying the continuing existence of a "radar spy ring" at Fort Monmouth. After questioning nearly 100 persons, he dropped the closed hearings early in November.

(JAN. 54, P. 22, by PT staff)

This half page reserved for selections by Gloria (unless Steve chooses to intervene)

The Oppenheimer Case

ONE year ago this month the President's personal advisor on atomic energy matters, Admiral Lewis L. Strauss, succeeded Gordon Dean as chairman of the Atomic Energy Commission. Four days after assuming office, Strauss had taken steps to initiate a new security and loyalty investigation of the theoretical physicist who had served a decade earlier as the chief architect of the atomic weapons program to which the AEC owes its existence.

The AEC's case against Oppenheimer, developed at length during the latter half of 1953, consisted of a list of charges presented to him on December 23rd in the form of a letter from Major General K. D. Nichols, general manager of the Commission. Oppenheimer's "Q" clearance was suspended at that time and he was notified that he could, if he chose, request a hearing before a personnel security board of the AEC. He replied in writing on March 4th with a detailed answer to the allegations contained in the Nichols letter and asked that he be granted a formal hearing. The AEC accordingly established a board for that purpose under the chairmanship of Gordon Gray, president of the University of North Carolina and former Secretary of the Army. The two other members were Thomas A. Morgan, former president of the Sperry Corporation, and Ward V. Evans, professor of chemistry at Loyola University in Chicago.

For several weeks the board members heard testimony, questioned witnesses, and examined relevant documents. Then, on May 27th, they submitted their findings to Nichols in the form of a majority report by Gray and Morgan and a dissenting opinion by Evans.

MOST items of derogatory information considered by the board had to do with matters of left-wing associations and activities dating back to the late 30's and early 40's—information which Oppenheimer had over a period of many years discussed repeatedly with security officers and which had been considered in prior clearances. Other items had to do with continuing associations with persons known or alleged to have had Communist sympathies or to have been party members—his wife, his brother and sister-in-law, former associates or acquaintances, a personal friend of long standing. He testified fully, often in elaborate detail, with respect to these matters during the four weeks of the hearing.

Gray and Morgan, disturbed by Oppenheimer's failure to discontinue some of his personal relationships, remarked at one point in their report: "Loyalty to one's friends is one of the noblest of qualities. Being loyal to one's friends above reasonable obligations to the country and to the security system, however, is not clearly consistent with the interests of security."

The objections registered by scientists since publication of the report, however, reflect a quite different kind of uneasiness. One example is the following statement, which was released on June 12th on behalf of the Council of the American Physical Society by APS President H. A. Bethe:

> The Council of the American Physical Society is deeply perturbed by the considerations used by the Gray Board in withdrawing the clearance of Dr. J. Robert Oppenheimer.
>
> The chief new charges against Dr. Oppenheimer arose from the advice he gave on request and his subsequent attitude concerning the H bomb. This question was a very difficult technical and policy matter on which opinions widely differed with many men of assured loyalty and competence sharing Dr. Oppenheimer's views. Charges based on policy disagreement appear to be customary in Russia but we regard them as not only morally reprehensible but also very harmful to our national welfare. If a man whose advice is sought must fear that his potential utility to the Government may be challenged because his reasoned recommendations later become politically unpopular, he may be tempted to give advice that is politically safe rather than technically valid.
>
> The opinion rendered by the majority of the Gray Board leaves this important question in doubt. While clearing Dr. Oppenheimer of all specific charges raised against him in connection with the H bomb development, they reprimand him for his lack of enthusiasm for the program after it was officially adopted. To require such subservience to an official viewpoint as a proof of trustworthiness is to prevent the development of the best thought.

(JULY 54, P. 11, photo by Gertrude Samuels, PT

(JULY 54, P. 4, 5, 7, by PT staff)

From: Jeff Schmidt
To: GCOLLINS, BSCHWARZ, JBARKER, AKLAR, CDAY, WKORNBER...
Date: 4/1/98 2:16am
Subject: Priorities of items -Forwarded

Hello to interested coworkers,

I have heard a rumor that the managers at the magazine have put others to work cutting up and redoing the decade of excerpts that I was supposedly in charge of. They have not said a word about this to me. And they have not discussed the excerpts with me at all. I was in the middle of working with Gloria to adjust my original line-up of selections toward her preferences. I am hoping that the rumor is false. Earlier I sent Gloria the attached message.

Jeff

CC: i:jschmidt@aip.acp.org

Mail Envelope Information

Subject: Priorities of items -Forwarded
Creation Date: 4/1/98 2:16am
From: Jeff Schmidt

Created By: ACP.AIP:jschmidt

Recipients
Post Office ACP.AIP
AKLAR (Abby Klar)
BSCHWARZ (Bert Schwarzschild)
CDAY (Charles Day)
CLUCAS (Carol Lucas)
EPLOTKIN (Elliot Plotkin)
GCOLLINS (Graham Collins)
JBARKER (Judy Barker)
PELLIOT (Paul Elliot)
RWEHRENB (Rita Wehrenberg)
TFEDER (Toni Feder)
WKORNBER (Warren Kornberg)

Post Office ACP.apsdpost
goodwin (Irwin Goodwin)

Post Office i
jschmidt CC

Post Office i
jak

Post Office i
bgl

Domain.Post Office	**Route**
ACP.AIP	ACP.AIP
ACP.apsdpost	ACP.apsdpost
i i:aip.acp.org	
i i:interport.net	
i i:worldnet.att.net	

Files	**Size**	**Date & Time**
Mail		
MESSAGE	499	04/01/98 02:16am

From: Jeff Schmidt
To: GLUBKIN
Date: 3/31/98 7:06pm
Subject: Priorities of items

Hi Gloria --

I'm sorry that I wasn't able to call back after we spoke briefly this afternoon.

I was calling simply to ask if you have had a chance yet to suggest priorities for the 35 technical physics items that you and I identified yesterday as candidates for me to include in the first decade of excerpts. The 18 items that you identified and the list of 17 that I assembled after our meeting should give us plenty to choose from.

As I said at our meeting, I would be happy to determine the priorities, but I wanted to offer you the opportunity.

-- Jeff

CC: i:jschmidt@aip.acp.org

From: Barbara Levi <bgl@worldnet.att.net>
To: Gloria Lubkin <glubkin@aip.acp.org>
Date: 4/1/98 2:08pm
Subject: forwarded messages

Hello to interested coworkers,

I have heard a rumor that the managers at the magazine have put others to work cutting up and redoing the decade of excerpts that I was supposedly in charge of. They have not said a word about this to me. And they have not discussed the excerpts with me at all. I was in the middle of working with Gloria to adjust my original line-up of selections toward her preferences. I am hoping that the rumor is false. Earlier I sent Gloria the attached message.

Jeff

That's interesting, Jeff. The rumor you have heard seems to be completely true. The story I heard was that Steve had offered you a chance to make appropriate changes yourself and you had refused to do so, and so the decade was turned over to Warren and Bert.

I guess there has been a misrepresentation of the truth somewhere along the line.

I wonder what stories are being circulated about me. One that I've caught a hint of is that I'm leaving PT "for health reasons" or "for the sake of my mental health." I want to assure all of you that my health (in both respects) is better than it has been in a long time, and the central reason for my leaving is disgust at how this place operates. I hope that if you hear the "health" story that you will try to persuade the teller that it is a malicious rumor.

Of course, I don't know that these stories have been generated by management.

But perhaps you should all compare notes about what management is saying about each of you behind your backs?

-- Graham
--
Barbara G. Levi bgl@worldnet.att.net
Senior Editor 805 965 3483 (tel)
Physics Today 805 963 2574 (fax)

4/1/98 SB conv w/ Jeff: I said he was removed from the May issue.

→ Poor editorial judgement on his part

→ No team effort – shut out Warren, drove him to quit.

→ More work for others to fix it.

He says the decision is wrong (to remove him).

" " Warren wanted even more political items, but I pointed out that was Warren's role – Jeff's was to find the physics. He said his role was to make it "interesting". I said that showed his poor judgement, since his view of "interesting" presented a very ~~poor~~ unbalanced image of Physics Today – it was not a political magazine.

He said he had many (he quoted a specific number) of physics items and was working with Gloria to include them. He was a team player. I said his "autocratically dictating" to Warren what Warren's input should be was clear evidence to the contrary. His physics excerpts were "after the fact", I said.

I told him I had seen enough of both his poor judgement and his lack of team spirit – he needn't trouble himself further with the May issue. He should work on Dekker for June.

From: Jeff Schmidt
To: ACP.AIP(AKLAR, BSCHWARZ, CDAY, CLUCAS, EPLOTKIN, J...
Date: 4/2/98 4:23pm
Subject: Excerpt from first decade

Dear Graham,

Thank you very much for your message. Steve Benka finally spoke with me to confirm that the rumor is indeed true. He made it clear that based on what he had seen of the excerpting I had done so far, he didn't trust me to do any further work on the eight-page section.

To the staff members who are taking over those pages, I would like to recommend including the following excerpt. It is from a statement by the American Physical Society on the withdrawal of J. Robert Oppenheimer's security clearance. (Physics Today, July 1954, page 7.) I think it is particularly important and timeless.

-- Jeff

"Charges based on policy disagreement appear to be customary in Russia but we regard them as not only morally reprehensible but also very harmful to our national welfare. If a man whose advice is sought must fear that his potential utility to the Government may be challenged because his reasoned recommendations later become politically unpopular, he may be tempted to give advice that is politically safe rather than technically valid. . . .

"To require such subservience to an official viewpoint as a proof of trustworthiness is to prevent the development of the best thought."

From: Stephen Benka
To: jschmidt
Date: 4/16/98 10:27am
Subject: Vacation -Reply

OK.

>>> Jeff Schmidt 04/16/98 07:58am >>>
Steve --

As I mentioned at the article distribution meeting yesterday, I am planning a vacation for 11-22 May 1998.

-- Jeff

4/24/98

PHYSICS TODAY

from Stephen G. Benka

Jeff's parting words to Graham (on his farewell card).

"To truth, whether they like it or not. Keep up the good work."

D00384

27 April 1998

To: Theresa Braun, Director of Human Resources, and James Stith, Director of Physics Programs, American Institute of Physics

From: Jeff Schmidt, Senior Associate Editor, Physics Today

Subject: My 1998 performance review

I am writing to ask that my 1998 performance review be redone. Physics Today editor Stephen Benka wrote the review under the direction of Physics Today publisher Charles Harris. I discussed the review with Benka, who, after consulting with Harris, refused to make any of the revisions that I requested. Therefore I am appealing to you to produce a new review.

The review was not conducted in accord with American Institute of Physics policy or procedures, and the result is not a fair assessment of my work as a feature articles editor at AIP's Physics Today magazine. I am asking you to produce a new review not just in the interest of accuracy, but also as a necessary affirmation that in the future the American Institute of Physics will treat its employees fairly.

The review lowers my performance rating from last year's "4" ("Exceeds Job Requirements") to a "3" ("Meets Job Requirements") even though this year I did more work and more innovative work. Producing feature articles for the monthly magazine is a team effort, and I think that the many staff members with whom I work will testify that my work is better than average.

The biased review that I received is punishment for my organizing activity at the magazine. It is one of a number of recent reprisals for -- and moves to stop -- such activity, in which I have played a leading role in the interest of both the magazine's staff and the physics community. The central retaliatory feature of the review is that it makes what it admits are "new demands," which amount to a sharp increase in my workload.

I have had 17 performance reviews since I began working at Physics Today in March 1981, but until now I have never needed to write a response to one. This time, however, not only is the review inaccurate, but my supervisor, editor Benka, presented it to me with the attitude that performance reviews at AIP are not done with employees, but are done <u>to</u> them. This violates both the letter and the spirit of AIP policy. He acted as if he were not permitted to change the review in any significant way, and so his discussion of its contents was only <u>pro forma</u>.

In this memo I will first describe some of the ways in which the review is inaccurate, and then I will explain how

it is a reprisal for my organizing activity and part of a series of recent attempts to stop me from engaging in any further collective activity at the magazine.

Review inaccurate

I will go over every sentence of the performance review and show how the review plays down or completely leaves out my accomplishments while contriving deficiencies and playing them up. The review has four sections: three sections focusing on my major areas of work responsibility and one section of additional comments.

Article editing

Concerning my article editing work, the review states that "Jeff's articles are generally ready on time and are often early." This plays down my accomplishments and does so deliberately, because management keeps records of deadlines and work-completion dates and is fully aware of what I have done in this regard. The words "generally ready on time" must be changed, because my articles were always ready on time and never delayed an issue of the magazine. And the words "often early" must also be changed, because my articles were almost always early and were often very early.

This is not to say that management can reasonably hold me responsible for the final completion dates of the articles that I work on. They cannot, because the publication process depends upon the work of the magazine's editor and many coworkers, over whom I have no authority. What my review should note is that I always did my part as fast or faster than can reasonably be expected, and certainly much faster than average. At one point during the year, for example, I had two feature articles ready to go to the printer more than a month before the deadline (discussed further in the following two paragraphs). As far as anyone can remember, this had never been accomplished before at Physics Today. My articles came close to the deadline only when the editor failed to meet his deadline for obtaining the articles and giving them to me to edit. I ask that you rewrite this part of my performance review and increase the numerical rating to reflect the resulting more accurate appraisal. I am asking you to do this not just to make my review more accurate, but also to assert that it is not AIP policy to begrudge an employee praise when it is due, even if AIP has a grudge against that employee.

On the issue of deadlines, I would like AIP to use its own performance as the standard for comparison. AIP gave me my performance review more than five weeks late, missing its mid-February deadline and then not even completing the review by the middle of the following month. Benka dated my review 12 March, signed it on 23 March and gave it to me on 24 March.

One big reason that I did more work this year than last year was because management stated that it wanted the magazine to have a backlog of feature articles that were edited and completely ready to be sent to the printer. I supported this goal and produced such articles, but this unprecedented accomplishment is not mentioned in my performance review. Management is fully aware of my accomplishment, as evidenced by the fact that they praised it at a staff meeting.

Working way ahead of the deadline has the potential advantage of avoiding some major inefficiencies (described in the following paragraph), but doing so turned out to involve extra work, because although management asked for and praised the result, they did not support the effort while it was underway. It was left to me to bring about the changes in the workplace necessary to work ahead. The editor consistently maintained a crisis mentality, always giving priority to work for the next issue -- which he always worried would be late -- over work for future issues. Because the work of most employees on a forthcoming issue doesn't end until around the time that the issue goes to press, the editor, with his crisis priorities, never deemed it reasonable to work on later issues. I was able to accomplish management's goal of completing work ahead of schedule only by working directly with the staff team that actually does the work (Rita Wehrenberg, editorial assistance; Paul Elliott, copy editing; Elliot Plotkin, art work; Judy Barker, proof reading; Carol Lucas, photo permissions), and carefully avoiding coming to the overly insecure editor with questions of work priority. I ask you to add this accomplishment to my performance review and raise the numerical rating to reflect the resulting less biased appraisal. I ask you to do this not only to make my performance review more accurate, but also as a way of saying that AIP does not condone biased appraisals of employees.

Another big reason I did more work this year was the inefficiency caused by the magazine's periodic exhaustion of its supply of feature article manuscripts that are ready to edit for publication. It is Benka's responsibility to obtain articles for the magazine. The shortage of articles resulted in a very uneven work flow and forced me to edit some articles close to the deadline, which often meant editing in parallel with the author's making revisions. It is easy for the editor to say "just work in parallel," but such work often necessitates reediting material that the author changes and discarding edited material that the author removes, and a host of other problems. The shortage of articles led me to write to the editor in the middle of the year asking for more work. (See attached memo of 18 August 1997.)

The numbers given in the performance review are all wrong. The review says that this year I "was asked to produce 16-18 articles." In fact, the agreed upon rate was initially 16 per year, not "16-18," the precise meaning of which is not at all clear since there presumably is no upper limit. Benka and I later in the year agreed to reduce the annual rate to 14 and increase the amount of work that I do in areas other than editing, yet the number "14" never appears in my performance review. I ask you to correct this.

As far as the article editing part of my job goes, my production rate is supposed to be measured by the number of articles published in the magazine in the issues March 1997 through February 1998, as is written at the top of the review form. During that year I edited 13 articles (Mahan, Ferguson, Crabtree, Crowley, North, Parsegian/Austin, Harris, Soulen, Libicki, Perl, Ross, Riordan, Mourou), one of which (the Parsegian and Austin combination article) should count as more than one because making it happen involved a lot of extra work. (More about that article below.) Although this is less than the agreed upon goal, it should be deemed acceptable because of the shortage of articles (AIP should not hold employees responsible for doing work that is not available to do) and because of the extra work caused by that shortage and by management's lack of support for working ahead. Please correct the accounting in this part of the review.

The review gives an incorrect reason (a personal reason) for the mid-year change in my job description. The reduction in my article editing goal from 16 to 14, and the corresponding increase in my work following up with authors on articles that have been solicited, was prompted by the magazine's shortage of articles. On 18 August 1997 I gave Benka a note (attached) asking for more articles to edit. On 19 August 1997 he answered with a very defensive note (attached) blaming me in part for the magazine's shortage of articles and at the same time denying that there was any such shortage. He claimed that I was in part to blame, because following up on solicited articles was part of my job. On the same day (19 August 1997) Benka secretly altered my job description, adding truth to his claim that solicitation follow-up was a significant part of my job. When I discovered the change, he and I discussed it and I agreed to make solicitation follow-up a bigger part of my job. I asked him to write me a note saying that my job description had been changed (see 25 August 1997 note from Benka, attached).

The change in my job description, while made official in the middle of the year, should be considered retroactive to the beginning of the year, because the problem it addressed was long-standing and I had long before addressed it on my own: The shortage of articles to edit had already

led me to shift some of my work from editing to solicitation follow-up. Solicitation follow-up is an area in which I make valuable contributions to the magazine. This often time-consuming work includes giving feedback to authors and working closely with them to develop greatly improved articles for the magazine.

Finally, on 2 September 1997 I gave Benka a note (attached) explaining that solicitation follow-up was not the weak link in the magazine's feature article operation. That note, the contents of which Benka never disputed, is an important part of this appeal about my performance review, and as such, I ask you to read it. Please remove from my performance review the incorrect reason given for the change in my job description, and add a statement concerning the magazine's shortage of articles, because it played a crucial role in my work last year.

My work on the Parsegian/Austin combination article is one of many examples of how my performance review leaves out major contributions that I have made to the magazine (while carefully including minor, largely contrived, deficiencies). Physics Today was planning to publish in its July 1997 issue a manuscript by V. Adrian Parsegian of the National Institutes of Health, but the article received a highly negative appraisal from the magazine's external reviewer, Robert H. Austin of Princeton University. This caused a crisis, because the magazine had no article to substitute -- having completely run out of articles -- and because there was no time for Parsegian to make the extensive revisions that were called for by the reviewer.

Based on the nature of Parsegian's article, the nature of Austin's review and my confidence in the critical abilities of the magazine's readers, I suggested a solution: Publish the article and the review. This was unprecedented at Physics Today, but the editor followed my advice, in part because no other solution was apparent. I edited the combination article and review and handled the delicate and protracted negotiations between Parsegian and Austin, who did not trust each other. The solution was innovative, the result was outstanding and the magazine survived a crisis without damage. In fact, the result was better than it would have been had there been no crisis, because the crisis allowed the magazine to break with tradition. Yet the managers, who seem this year to have developed photographic memories for negative things (real or contrived), have completely forgotten about my special contribution to the magazine during the Parsegian crisis. I ask that my work on the Parsegian/Austin article be described on my annual review, as an example of my valuable advice and above-average work. And I ask that my numerical rating be raised to reflect the new, unbiased text.

You might think it strange that even though the review states that I edited enough articles during the year, it

lists the names of some articles that I didn't edit -- articles that were never assigned to me and that I was not expected to edit. That list appears on my performance review as a defensive measure by the editor -- to bolster his claim that under his editorship the magazine does not experience shortages of articles. Soliciting a sufficient number of articles for the magazine is the editor's job, and so the appropriate home for arguments that he has succeeded is the "Employee's Comments" section of his own performance review. Please remove the sentence and its negative connotation from my performance review. (For a discussion of how the list is not even what it claims to be, see the fourth paragraph of my memo of 2 September 1997.) Such lists do not appear on the performance reviews of other employees. The performance reviews of Physics Today news writers, for example, do not contain lists of the countless news stories that they could have written but didn't.

The review lists three articles that I edited (Perl, Crabtree/Nelson, Mourou) and claims that the quality of my work varied. In fact, because of my own standards I do a quality job on everything I do. There is, of course, no objective measure of the quality of editorial work. Articles are inherently different and hold a different appeal to different readers. In my performance review the editor implies that praise from authors is one measure, but he fails to note that we received praise from the authors of all three articles. Martin Perl, winner of the 1995 Nobel Prize in Physics, wrote to me and said "Thank you for changing my ugly duckling of a manuscript into a beautiful swan. You have done a wonderful job." I have attached a copy of his note along with a note from George Crabtree of Argonne National Laboratory praising our efficiency, competence and high production standards; Mourou delivered his praise in a telephone call.

It is true that the changes that Benka mentions making in the Mourou article were improvements that other staff members or the author might not have made at one of the later stages in the processing of the article. However, it is wrong to use this as the sole factor in judging the quality of work on the entire article, which would have been excellent even without Benka's improvements. And it is even more wrong to use it to judge an employee's entire year of work. Stephen Benka knows this. He knows, for example, that AIP management will not judge all of his excellent work on the Mourou article solely by the fact that he tried to introduce a mistake in the article's opening paragraph -- where he crossed out "30 angstroms" and wrote in "300 nm" and had to be corrected by the Article Editor. And he knows that his supervisors certainly will not judge his entire year of work in part by this mistake. He would see mentioning it on his annual performance review as petty, mean-spirited and sure to make team work impossible because it would give the impression that no error is too small for

the people that he works with to silently note and use against him months later. Please remove from my performance review the entire subjective sentence about the three articles.

Solicitation follow-up

Concerning my solicitation follow-up work, the performance review understates the quality of my work and rates me only slightly above average. The only activity mentioned is that I "regularly nudged authors and reviewers whose items were pending." This is actually the smallest part of solicitation follow-up work. The biggest part, at least for the articles that I work on, is giving detailed feedback to the author and working with the author to develop a much better article. I often go way beyond the call of duty, taking extra time to work closely with authors to improve the final result. I am prepared to supply written evidence showing that my work in this area is exemplary. Please change the review so that it more accurately portrays my work in this area, and raise the numerical rating from the present stingy "3.5."

Advice

Concerning the advice that I offer on editorial and other matters, my supervisors have suddenly (that is, within this review period) started looking for ways to prove that the advice I offer is bad. Coming up empty-handed, they have contrived two examples, one of which is a new, negative interpretation of advice I gave in an earlier review period. My 1998 performance review says, "Jeff's reviews of manuscripts have been completed more promptly than in the past, although they were somewhat less helpful." It is simply not true that my advice was less helpful this year. My comments on manuscripts often went beyond the minimum requirements and spelled out in detail what should be done to produce a publishable article.

As evidence that my advice is less helpful, the performance review gives only the following example, which is presumably my most deficient piece of work in this area for the entire year: "In his review of one Letter to the Editor, for example, he showed questionable judgement in his assessment of the physics competence of the authors of the Hubble Deep Field article (April '97)." There is absolutely no truth to this charge; its only value is that it reveals the bias of those who made it. I demand that my work on this letter be evaluated by an unbiased individual. James Stith, I would like you to be that individual, not because it is your job to handle appeals from Physics Today, but because your long-standing interest and expertise in physics education qualifies you to evaluate my work on this letter. All work on the letter was done in writing, and so you have a 100% complete record to review (attached). I challenge

you to find anything in my work on the letter for which I should be punished.

Here is a five-step summary of the facts of the case:

1. I edited an article by Henry Ferguson and two coauthors for the April 1997 issue of Physics Today.

2. Robert Weinstock, an emeritus professor of physics at Oberlin College, submitted a letter to the editor saying that he didn't understand how astronomers could look back more than half the age of the universe, as a photo caption in the article said. "This claim seems strange to me," wrote Weinstock, "for radiation emitted so long ago must have had its source so close to Earth at the moment of emission -- according to the generally assumed big-bang origin of the currently expanding universe -- that it would have reached Earth [long ago]." He ended his letter by saying that "If there is something wrong with my analysis, I shall be grateful to have it explained to me."

3. I thought Weinstock asked an intriguing question and that many of our readers would also be grateful for an explanation (and would value a magazine that gave them such explanations). Here, in its entirety, is my review of the letter: "I think a lot of our readers would appreciate an answer to the question that Weinstock raises. I suggest that we publish a shortened letter (see enclosed edited version) along with an answer from Ferguson." (The parenthetical words were part of my review.)

4. To my disappointment, the response from Ferguson and his coauthors was based completely on equations, with no explanation of what was going on. I wanted a physical explanation, not a mathematical one. So I recommended that we ask Ferguson & Co. for something very simple. Of course, as good science writers and teachers know, an explanation that is simple and without equations is sometimes much more difficult to produce. Sometimes when scientists don't have a Feynman-style intuitive understanding of a particular issue, they take refuge in equations. That is, sometimes authors don't understand the physics of every item that they report in their articles. I have encountered this countless times over the years while questioning authors so that I could clarify something in their articles. Sometimes they say: I don't know, my coauthor wrote that part of the article. Or they say: I don't know, I got that from So and So's paper in such and such journal. So in my review of Ferguson's letter I warned that this was one possible reason why we got only equations. I figured that if we were aware of this possibility, then we wouldn't go back to the authors again and again in a futile effort to get something that they were not prepared to supply. Here, in its entirety, is my review of Ferguson's letter: "Weinstock's question should get a physical explanation as an answer, not a

mathematical one like this. I say drop the mathematical one, don't just add the physical one to it. Perhaps ask Ferguson & Co. to write what they would say to a high-school student (or radio audience) who noticed this seeming contradiction. One possible reason that Fergie & Co. answered as they did is that they don't really understand the physics."

5. Benka rejected my suggestion that we ask Ferguson for a simple answer, and, ironically, punished me seven months later for not being fully confident that Ferguson could have provided such an answer. Because my advice was rejected, Physics Today readers ended up seeing no question from Weinstock and no answer from Ferguson.

You can see clearly now that while my performance review says, "he showed questionable judgement in his assessment of the physics competence of the authors," I in fact never made any assessment of the physics competence of the authors, positive or negative. Even if I had made such an assessment, the Physics Today managers did not and cannot accurately claim that the advice it led me to give was anything less than excellent. Their relentless search to find fault with my work, and their twisted and biased evaluations of my work when it contains no real fault, raise serious questions about their professionalism as managers and certainly disqualify them from judging my performance. If you judge that I did good work on the letter, as I claim, then I ask that my performance review mention that work as an example of my routine interest in serving the magazine's readers, and that the numerical rating on my review be raised to reflect the new, unbiased assessment. I ask AIP to make these adjustments not just to make my performance review more accurate, but more importantly as an urgently needed announcement that AIP will no longer use performance reviews to punish employees who raise troubling workplace issues.

As with every other part of my performance review, Benka refused to make any changes in this part of the review when I pointed out its inaccuracy. I asked him if he had any other examples of my supposedly bad judgment. All he could think of was something from an earlier review period: my suggestion that Physics Today try to get G. Pascal Zachary to write an article about Vannevar Bush. Zachary is a journalist -- one of the best in the country, I think -- as well as a history of science scholar. I had learned that he was writing the first ever biography of Bush, who was the first presidential science advisor and an individual who played a key role in shaping the federal science policy that prevailed for decades after World War II. After I proposed this article at a staff meeting, Physics Today publisher Charles Harris spoke about it with AIP history division postdoc Joel Genuth, a friend of Harris's at the time. I spoke with Genuth, too. Genuth advised against the article,

because Zachary was not a mainstream thinker -- quickly adding that he (Genuth) was "no slouch" and could write the article for Physics Today. At a subsequent staff meeting, I reported positive evaluations of my proposal from more established science historians and argued that our readers could handle Zachary's point of view. But Harris stuck with Genuth's review, and so that was the end of my proposal.

Now, more than a year later, during the discussion of my 1998 annual review, Benka has put a new, totally negative spin on my work on the Zachary proposal. To my surprise, when he mentioned my judgment in the Zachary case, Benka showed no sign of embarrassment, apparently completely unaware that Zachary's book was recently published to widespread praise and attention. The vast majority of books are not reviewed anywhere, but Zachary's Endless Frontier: Vannevar Bush, Engineer of the American Century (The Free Press, 1997) was both widely and positively reviewed by well-respected experts writing in major publications. (Please read the attached reviews.) Apparently, the official Physics Today line now is that Zachary managed to hoodwink major American publications and experts -- but not Physics Today. Again, because my advice was not followed, Physics Today readers missed out on what surely would have been an interesting article. Yet I am the one whose judgment is being questioned -- for reasons that I will explain below.

I ask that my performance review be corrected so that my judgment, and its value to the magazine, is discussed positively rather than negatively. I would like my work on the Zachary proposal to be mentioned as an example of the fact that I offer ideas of merit even though I am not expected to be a major source of article or story ideas. I ask that the numerical rating be raised to reflect the new positive evaluation, and that the rating be above average to reflect the fact that I offer more than the required advice. I request that AIP make this change not just to make my performance review more honest, but more importantly as an implied announcement that AIP will no longer prejudice performance reviews against employees who raise awkward workplace issues.

Additional comments

In the handbook that is given to all employees, the American Institute of Physics promises that the annual performance review will feature a discussion of "mutual goals." (Employee Handbook, page 18.) Without explanation, this year Benka followed neither the letter nor the spirit of this policy, and didn't even pretend to be interested in what direction I might want to go in my work at AIP. The discussion was unlike anything I have experienced in previous years. He simply announced a big change in my job description -- an increase in my workload by as much as

three months' worth of work per year -- and discussed it as if he were giving orders to a machine. Over the years my job description has changed many times (the most recent change being on 25 August 1997), but never by unilateral management dictate, without discussion and mutual agreement. For reasons that I will explain below, I think this change, and its unilateral imposition in violation of American Institute of Physics policy and usual practice, is punitive.

The written review accurately calls the change "new demands." But it inaccurately implies that other Physics Today staff members are meeting such new demands. My coworkers have experienced no such major increases in their workloads either voluntarily or by management order (except in one or two cases in which individuals have voluntarily renegotiated their job descriptions, job titles and salaries). My coworkers and I work hard and cannot reasonably be expected to take on additional work. Among my coworkers who have not stepped up their workloads are Gloria Lubkin, Barbara Levi, Bert Schwarzschild, Charles Day, Irwin Goodwin, Carol Lucas, Toni Feder, Jean Kumagai and Warren Kornberg.

The 25 August 1997 agreed-upon change in my job description reduced my article editing work to 70% of my time (14 articles per year) so that I could increase my work in other areas, which I have done. Now, just a few months later, AIP is using my performance review to arbitrarily increase my annual article editing load to 18 -- a 28 percent jump. The performance review also changes my job description to add a significant load of clerical work (keyboarding) to my job for the first time in my 17 years at the magazine. Other editors who work better on paper (for example, the book review editor and the copy editor) are not being told to change the way they work or to take on the associated clerical work. This clerical work, which includes keyboarding the dozens of changes made by the copy editor, could take as much as a few days per month, depending upon the article. It would lower the overall efficiency of work at the magazine, because the time spent on clerical work would, of course, reduce the time available to do other work such as article editing and article solicitation; instead of paying $15/hour for clerical work, AIP would pay $30/hour. Like many people, I do better work on paper than on a computer screen (and a long-standing back problem precludes long sessions sitting in front of the screen anyway). I ask that support staff be made available once again. Even if management had a valid reason for adding clerical work to my job, that reason cannot be a new one. What <u>is</u> new is that, for reasons discussed below, management has suddenly gotten "on my case" and is taking a hard-line on every issue.

In Benka's <u>pro forma</u> discussion with me about my performance review, he never asked about the direction in

which I would like to go on the job. If I were able to take on additional work, I would like that additional work to be somewhat different from what I am doing now, to provide some variety and to contribute to the magazine in a different way. When I explained this to Benka, he acted uninterested and reasserted his uninspiring, unilaterally developed plan for me, which is to do the same work, only a lot more of it.

Reprisal and repression

The American Institute of Physics is making a strong effort to prevent Physics Today staff members from pursuing workplace grievances in an organized way. Problems are to be discussed with managers on an individual basis only, we have been told. (Message transmitted to staff through warnings to Graham Collins and in other ways.)

Physics Today staff members have many legitimate concerns. Many believe, for example, that the company fails to provide conditions of employment appropriate for professionals. According to my philosophy, if there is a problem, then everyone who is in a position to address it has a moral obligation to do so. Thus, problems at the magazine are everyone's business -- the business at least of everyone who works there. Even though management doesn't see it that way, I have always tried to do whatever I could to help solve problems that arise, whether or not they affect me directly. You, too, are in a position to do something about the problems at the magazine, and therefore I think you have an obligation to do so, for the sake of both the magazine's staff and the physics community.

During the discussion of my performance review, Physics Today editor Stephen Benka condemned my organizing activities at the magazine and said bluntly that such activity "is not going to be tolerated anymore." He characterized the staff actions in which I have played a leading role as nothing more than "disruptive," rejecting my view that the source of the problem is management's failure to address staff grievances. A workplace in which unity is discouraged, as it is now at the magazine, is disruptive. The low morale, the inability to confront problems, the loss of talented and dedicated staff due to a love-it-or-leave-it atmosphere -- these consequences of management policy are disruptive and wasteful.

Physics Today publisher Charles Harris has made it clear to me and to many staff members (names withheld) that our activities have infuriated him. And American Institute of Physics Executive Director/CEO Marc Brodsky has characterized some of my activities, presumably reported to him by Harris, as "counterproductive" (20 March 1998). It is clear that Benka's hard-line attitude toward me is an attempt to redress Harris's and Brodsky's grievances with

the staff -- in particular, with those staff members whom Harris has identified as ringleaders. (Harris's ringleader theory insults the staff, because it implies that staff grievances arise not because of real problems in the workplace, but because an evil few have corrupted the minds of happy but gullible staff members and led them astray like children.)

In this memo I will be open about my organizing activities at Physics Today, because the problems at the magazine call for an organized response and because the physics community strongly supports physicists' right to organize without fear of reprisal. The latter point is evidenced, for example, in the community's many years of support for Soviet physicists who were punished for organizing, and in its concern today for physicists in other countries who face similar repression. In any case, freedom to address workplace problems is a necessary component of a truly democratic society.

Management is attempting in two ways to prevent the Physics Today staff from pursuing collective grievances -- by punishing those who speak out the most and by maintaining an increasingly repressive workplace atmosphere. My lower performance rating and subjection to an arbitrarily revised job description that makes "new demands" are punishments for taking up staff grievances. What follows is a discussion of a few of the collective staff activities in which I played a leading role and for which management criticizes me. Included is a discussion of some of the repressive measures that management has taken in response to those activities. The discussion should make it clear that my review is only one part of a series of recent attempts to stop me from promoting or engaging in any concerted staff activity.

1996 retreat

During the discussion of my performance review, Benka criticized me for my activities around the 19-20 November 1996 Physics Today retreat. Before that two-day meeting, I and some coworkers (names withheld) developed and distributed to the entire staff a list of changes that we wanted made at the workplace. We presented these requests in the form of a proposed agenda for the retreat. Fearing reprisals for making requests that might not please management, we did not disclose our names. However, the fact that I played a leading role was known to all. Job security was our highest priority, and so our demand for that topped our list. (See item 1 in attached document of 15 November 1996.) Other requests included staff involvement in workplace dispute resolution (item 4), better distribution of job tasks (item 5), affirmative action in hiring (item 8), and conditions of employment appropriate for professionals (the other items).

Salary equity

I worked with other staff members to demand pay equity at Physics Today. On behalf of those of us who were pushing for this, I told the Physics Today advisory committee at their 4 October 1996 meeting that the large salary differentials among the staff were not only unfair, but also divisive and bad for morale and productivity. I raised the issue at various staff meetings as well. Management was not pleased by the pressure we applied, in part because it forced them to give a staff member (name withheld) a special 25% salary increase, beginning on 1 June 1997.

Affirmative action

Management's anger at me increased dramatically, and never subsided, when I worked with Jean Kumagai and other staff members (names withheld) to assert the need for equal opportunity and affirmative action in hiring at Physics Today. We raised the issue when Ray Ladbury left the magazine, creating an opening on the editorial staff. (His replacement, Charles Day, started work on 2 June 1997.) I spoke out strongly on the equal opportunity and affirmative action issue, because Jean and I and the others didn't think Physics Today or AIP management took it seriously. Our concerns were largely ignored, and so, later in the year, we decided to bring the problem to the attention of the Physics Today advisory committee at its annual meeting, held 17 October 1997. On behalf of the concerned staff members (names withheld), I brought the matter to the committee's attention.

One week later, on 24 October 1997, American Institute of Physics Executive Director/CEO Marc Brodsky called me and said that I had made "a very, very serious charge." (Detailed notes available.) He directed me to meet with him and defend my charge, and I did so on 5 November 1997. At that meeting I gave Brodsky a note summarizing the important points. Rather than repeat those points here, I am attaching a copy of the note. (See note of 5 November 1997.) That note is an important part of this appeal about my performance review, and so I ask that you read it.

At my meeting with Brodsky I also pointed out that AIP had failed to conduct the affirmative action training that it promised to conduct in its 284-page "1996 Affirmative Action Program for American Institute of Physics." (See attached excerpts.) Among the many promises that AIP makes in that 1996 document is that "During the current plan year we will be conducting training for all employees about our affirmative action program and equal employment opportunity in the workplace." I pointed out to Brodsky that AIP did not conduct the promised training. He countered by saying that he was pretty sure that he mentioned affirmative action either at the one-hour question-and-answer session that he

held on 20 June 1996 or at the Q&A meeting that he conducted for employees at AIP's facility in Woodbury, New York. (I recall no such mention at the 20 June 1996 College Park meeting.) He indicated that this mention was the promised affirmative action "training."

Brodsky said he would look into affirmative action at Physics Today and tell me what he found. After a 4.5-month investigation, he met with me on 20 March 1998 and reported that he found that Physics Today's affirmative action program was doing very well. He said he judges the program by its results. (This was mysterious, because as of 20 March 1998, the Physics Today staff in the College Park office was all white; out of a staff of 18, the magazine had only one minority employee, working from New York.) I asked again about the promised affirmative action training. This time he said he was sure that he had mentioned affirmative action at both 1996 Q&A meetings, and he again indicated that such mention was the promised affirmative action training. After extensive questioning, he said that such mention was "part of" the promised training. I asked him when the rest of the training would be done, and he promised to look into that. In the end, I told Brodsky that we still believe our concerns to be well founded and that we are disappointed with his response. Apparently in Brodsky's view, however, the upshot of what happened is that I leveled serious, totally unfounded charges at AIP, and he is not happy about that.

1997 retreat

Management's anger at me increased yet again (and has not decreased since) when I helped raise staff concerns before and during the 25 September 1997 one-day Physics Today retreat. Before that meeting, I played a leading role in producing a list of proposed agenda items that represented a few of the many staff concerns. A majority of the staff supported it, and half of the staff signed it. (See attached e-mail message of 18 September 1997.) The top item on that list was a request for greater staff participation in decision making. The days leading up to the meeting saw much debate between management and many staff members over the meeting agenda, which management was formulating. Harris became upset that the staff wasn't embracing his agenda, and he began treating me and my coworker Graham Collins as ringleaders on the staff side, apparently becoming permanently angry at us.

At the retreat itself I asked if staff members could ask questions. Harris said no. I then said that I thought that we <u>should</u> be allowed to ask questions. Harris angrily said "No, That's an order!" Some days after the meeting he explained that he thought my request for the right to ask questions was another attempt to promote the staff agenda. At the retreat and in subsequent weeks, a number of brave

coworkers openly criticized Harris for the way in which he shut me up.

Gag order

After the retreat Harris put a gag order on me, handing me a written "notice" that implied that I would be fired the next time I said anything that Harris considered to be "counterproductive." (Document dated 26 September 1997 withheld.) This outraged many of my coworkers, who saw my forced silence as against their interest. They openly criticized the gag order, forcing Harris to rescind it. (Electronic mail message of 2 December 1997 withheld.) He did so reluctantly and without any decrease in his anger toward me.

Appeal to advisory committee

The gag order was just one of many management actions that strongly discouraged staff members from raising grievances of any sort. In an effort to get this chill lifted, a number of staff members (names withheld) decided to appeal to the Physics Today advisory committee at its annual meeting on 17 October 1997. We made our appeal to the committee, which reports to AIP's top management, in writing (memo of 17 October 1997 withheld) and in individual oral presentations. Our written note was titled, "Freer Atmosphere Needed at Physics Today" and began, "At Physics Today there is an increasingly repressive atmosphere that discourages staff initiatives...." The memo described how Physics Today staff member Graham Collins had also been warned about speaking up about workplace problems. It contained the following paragraph: "Both Jeff and Graham have been outspoken about problems that many of us see at the magazine. We feel that the lecture to Graham and the written notice to Jeff both contribute to a repressive atmosphere at the magazine and restrict all of us. We hope the advisory committee will do whatever it can to get these warnings retracted, and to remind the PT managers that repression is counterproductive. Such steps would go a long way toward diminishing the fear that staff members now associate with trying to openly address problems at the magazine."

Harris has harshly criticized me for my leading role in the presentations to the advisory committee, telling me and others (names withheld) incorrectly that I tried to get him fired. He sees this as an unforgivable offense that obligates him as a matter of manly honor to fire me or eventually drive me out and that gives him the moral right to do so by any means. Those means include steps that appear honest to outsiders but are not -- such as the present performance review, which imposes an unattainable goal that can be used against me a year from now when it has

not been met. When I explained to Harris that neither I nor the other staff members involved tried to get him fired or even wanted that to happen, he replied that I was either naive or lying. (I still do not want him fired, but I can no longer speak for others on this point. Respect and support for Harris by other staff members, including some not involved in our collective activities, have deteriorated sharply.)

Ban on my private conversations

In pursuit of his agenda, Harris has evidently given Benka license to go after me and other perceived management enemies on the staff. I will briefly describe here a recent example. (A more detailed account is available.) At about 6 pm on Wednesday 28 January 1998, I was in my office talking to my coworker Toni Feder on the telephone when Benka opened the door and asked rudely and sarcastically if I was talking to one of our authors. I said, "No, I'm talking to a coworker, Toni." He acted as if he already knew that. He stepped further into my office and said that he wanted in on our conversation. This was unprecedented and frightful. I switched Toni to the speakerphone and told her that Stephen Benka was here and wanted to be in on our conversation. She sounded equally shocked. Benka suggested that she walk over from her office to mine, and she said OK. I then walked out of my office and into the open area of desks just outside, and Benka followed. I did this to make room for Toni and to get some physical distance between myself and my supervisor, who was clearly behaving very strangely.

After Toni arrived, Benka asked us what we had been talking about on the telephone. I thought his question was way out of line, but I answered it anyway: We had been discussing the May 1998 50th anniversary issue of Physics Today. But after giving that short answer, I said that the important question is why he was trying to barge in on our conversation.

He answered by announcing that Physics Today management is forbidding all private conversations between staff members at work. From now on, all conversations between staff members must be open to management supervision, he said. When I asked him why, he referred to the organizing activity that took place last year and said that he doesn't want that to happen again. This smelled like a retaliatory and repressive policy aimed primarily at me, and so I asked him whether or not it applies to everyone. He said it does. I didn't believe him (but I didn't say that I didn't believe him), and so I pressed him three or four times to say whether or not he was going to announce the new policy to the rest of the staff. His final statement was that he knows that I want to know that.

The policy was never formally imposed on the rest of the staff, of course. But news of management's anger at private conversations spread quickly throughout the staff (yes, by way of private conversations). Even though the totalitarian policy officially applies only to me and Toni, it has put a chill on everyone's expression and has contributed to the repressive atmosphere at Physics Today.

Physics Today loses Graham Collins

In this memo I have for obvious reasons focused on my own case. But I don't want to leave the impression that management is critical only of me. In fact, they target any employee who speaks out about workplace problems. My most outspoken coworker, Graham Collins, was also the subject of a gag order and other reprimands for saying what many on the staff were thinking but were afraid to say. (Graham's gag order and mine were lifted at the same time.) I won't explain here how management irresponsibly made leaving the magazine Graham's best option. The details are available elsewhere. But with permission from Graham and all involved, I am attaching a copy of a note to Graham that I helped write after he submitted his resignation. (See attached note of 16 March 1998; authors' names withheld.) Please read the note as an integral part of my performance review appeal, as it contains a number of important and relevant points not made elsewhere.

'On my case'

As I mentioned above, management is now "on my case," and so my work is now subjected to greater scrutiny. Without precedent, the magazine's management recently examined and criticized some of my work before I completed it. (That was my work on the first of the five decade sections for the May 1998 50th anniversary issue of Physics Today.) Ever since the 1997 retreat, Physics Today publisher Charles Harris has given me the impression that I am being monitored. After the retreat he attended almost every magazine department meeting that I attended -- meetings that he had only rarely attended in the past. After some meetings, he commented privately to others about my performance.

Your moral responsibility

Physics Today's new love-it-or-leave-it policy, mentioned in the 16 March 1998 note to Graham, implies that the magazine's problems originate in the staff. Keeping the focus on the staff is not simply a harmless way that management diverts attention from itself, but is extremely costly. In the short time since Graham submitted his resignation, editor Benka's assistant Susan Funk has quit in frustration, and publisher Harris's assistant Carol Lucas has resigned. The loss of experienced staff, the

discouraged state of many of those who remain, the repressive atmosphere's toll on creativity -- in general, the frustration of those who want their job to be more than a simple exchange of time for money -- in these and other ways current policy wastes the resources of the physics community. You have a responsibility to undo the current widespread cynicism at Physics Today by making staff-initiated change possible.

18 August 1997

Steve --

As I have noted in many conversations and memos over the years, I work most efficiently in my job of feature article editing when I have articles at all stages of development. That means, for example, some articles that have just been solicited, some that have been submitted and reviewed, and some that have been revised by the author and are ready to edit.

As you know, our supply of articles in the last category has followed a "feast or famine" pattern -- mostly famine. This has held down my productivity to the point where I cannot afford to take the full 30-day vacation that I recently requested (and that you approved) and still meet my annual article editing goal. So I am thinking about cutting that vacation in half, perhaps, and using the rest of my vacation time at some later date. I won't be able to work out the details until some articles in the last category trickle in and I can draw up a schedule.

As of today, we have received neither of the two manuscripts that I am going to edit for the December issue. I would be working on them now if we had them. The Riordan manuscript, for example, is not expected to arrive until around the time I had planned to go on vacation. And I have no articles that I can edit now for issues following December. I would like to edit two articles for the January issue and two for the February issue, but I will not be able to do that under our usual famine conditions -- I will need to have the manuscripts much earlier than I have been getting them. If today I had four manuscripts ready to edit for those two issues, I could work on all four simultaneously, using my time to greatest advantage. I think you will agree that the magazine should be in a position where such productivity and advance work is routine.

Given the status of the December manuscripts, a 30-day vacation as planned would compromise my ability to edit two articles for that issue. I would like to take a shorter vacation and continue working at home much of the time, as long as that continues to work well. Please let me know if that is OK, and in any case please see how soon I can have four articles that are ready to edit for the January and February issues.

Jeff

August 19, 1997

Jeff,

It is the responsibility of the article editors at Physics Today to produce finished articles starting from any point in a given article's development.

Thus the responsibility of generating "ready to edit" articles is in part yours. For one example, we had agreed that you would obtain Colson's article on free-electron lasers, and have it edited in case we needed it for an emergency fifth article in the October special issue on the electron; otherwise we could drop it into the magazine a month or two later. Fortunately, we don't need it for the special issue; to my knowledge you have yet to acquire the article.

You were my first choice to edit several articles in late stages of development in the recent past, but turned them all down: Fink (March); Cohn (May; I edited that one, while you edited none that month); Jeanloz to edit with Soulen (August); a second article for October (you were reluctant to take Perl); Kasap for November.

As recently as two months ago, when you wanted to take paternity leave (which I OK'ed), you told me you didn't want any additional articles through the end of this year. As noted above, I offered you some anyway and you turned them down. You expressed no interest in articles, so I left you out of my plans for them.

I understand your special circumstances and once again offer you my heartfelt congratulations on the birth of Joshua Rose. If you are now ready once again to accept the responsibilities that go with feature articles, I can supply you with as many as you want. The articles that are currently "ready to edit" have been assigned to others. Nevertheless, I am sure we can reach a mutually acceptable state of affairs.

PHYSICS TODAY

from Stephen G. Benka

Jeff, As we discussed, as of today we are shifting your job tasks slightly:

Actual editing goes from a weight of 80% to 70%.

Following up on solicited articles goes from 15% to 25%.

— Steve
8/25/97

2 September 1997

Steve --

Thank you for responding to my note of 18 August 1997, in which I ask for more work -- specifically, more feature-article manuscripts that I can edit for publication in the magazine ahead of deadline. I was dismayed to find that instead of welcoming my request, your response focuses on assigning blame for the lack of such manuscripts and goes on to deny that we have any such deficiency.

You base the first part of your response on the fact that Physics Today staff members do follow-up work with the people whom you have invited to write articles for the magazine. You note that these staff members are therefore "in part" responsible for obtaining manuscripts that are ready to edit for publication. All this is true, but our severe shortage of such manuscripts is not due to deficient solicitation follow-up work by the staff as you imply. The article editors on the staff have, in fact, done a good job of following up on solicited articles -- staying in contact with the authors and working with them to produce the articles that you have asked them to write. If you think you could do better than we do, you should share your secret. For whatever it is worth, my experience is that when a conscientious and hardworking staff is blamed for a long-standing problem, the diagnosis is usually incorrect, and an incorrect diagnosis is an impediment to a real solution. (In my own case, according to my job description, solicitation follow-up has been a small part of my job; but I work at it conscientiously, and on my latest annual review you said that I do above-average work in this area.)

No, the problem is not your staff's lack of competence in its follow-up work with authors. The problem is simply that the magazine has solicited far too few articles. This has had unfortunate consequences, not only for the staff (as my note of 18 August 1997 describes for my case), but also for the magazine's subscribers. In the past three years I doubt that we have had even three months in which we have had a backlog of manuscripts ready to edit. Typically, the editor scrapes each issue together in a near-crisis atmosphere, after a desperate search around the office for manuscripts that may have arrived -- or that are said to be "in the mail." The lineup of articles in most issues of Physics Today is thus dictated by forces beyond our control.

Your listing of manuscripts that you say you offered to me begs the question of giving me more manuscripts that I can edit and prepare for publication, because we did not have the manuscripts on your list. In your own words, they were "in late stages of development." I should point out that even manuscripts that you consider ready to edit often are not. And when the shortage of manuscripts forces us to schedule incomplete manuscripts for near-term publication, we often have to pressure authors to work with us under undo

time pressure. This is unfair to both the author and the Physics Today staff, because it deprives them of the opportunity to do their best and therefore most satisfying work. The largest group to suffer, of course, are the readers. I don't know how many of the articles that you listed fell into that category, because I did not work on those articles.

As I said in my memo of 18 August 1997, I think article editing work is done most efficiently when it is done well ahead of the deadline. So in general I seek to work in advance and am reluctant to take on articles that, due to the shortage, will necessarily have to be done at the last minute, often after I have already scheduled work on other articles and often well after any reasonable deadline for submission. Month after month our work should not consist of "rush jobs" for issues that are upon us. I would have taken on the articles in your list if they had been scheduled for later issues -- or, even better, if they had not yet been scheduled for specific issues. But because of our serious lack of manuscripts, it has almost never been possible to work ahead.

In your response you say that I "agreed" to obtain William Colson's article by a particular date. This cannot be true. There is no way that I or any other Physics Today staff member could credibly "agree" that Colson and his coauthors would finish writing their article by a date that you picked arbitrarily. Only Colson and his coauthors -- all volunteers, remember -- could do that, and they did not. We cannot suddenly and unilaterally spring a short deadline on an author. The most we can do is ask our authors if they can meet such a deadline. Over the years you have asked many authors whether or not they could meet particular deadlines that you had in mind, and you have accepted later deadlines when they told you what they could do. Just because you are now talking to a staff member, rather than directly to the author, doesn't mean you can "just say article" and have it appear.

In the final paragraph of your response to my request for manuscripts, you boast: "I can supply you with as many as you want." This is simply not true. In fact, when we spoke after I received your response, you could not supply even one manuscript that I could edit for the January issue, the February issue or any subsequent issue. Of course, we will eventually come up with something to fill the holes in those issues. But, as usual, that is not likely to happen soon enough to allow us to work ahead. I am sure we could continue to pretend that this modus operandi is not a serious problem -- after all, we have managed to get by with it for a number of years. But it takes an unnecessary toll on many people, and so I think we have a moral responsibility to the staff (article editors, editorial assistants, art editor and copy editors), authors and

readers to solve the problem. I think the obvious first step is to admit that we do have a serious shortage of manuscripts and that the shortage leads to the problems that I have described here and in my note of 18 August 1997.

As I mentioned above, solicitation follow-up work has been only a small part of my job -- at least that is what I thought. When I saw how much you emphasized it in your response to my note, I took a look at my job description and noticed that such work was a bigger part of my job than I had remembered. Upon further investigation, however, I discovered that you had altered my job description after the fact to add truth to your claim. Indeed, the altered job description was dated 19 August 1997, the same date carried by your response to my note. For future reference, let me say here that I and other members of the staff prefer an above-board management style, where, for example, important changes are pointed out to people rather than being left for them to discover -- or, perhaps, not discover. In any case, you and I discussed the change in my job description on 25 August 1997, and I agreed to it. Thus, I will increase my solicitation follow-up work by about 2/3 and reduce my article editing by 1 part in 8. (I will continue to spend the large majority of my time on article editing.) Because of my preference for doing things above-board, I asked you to write me a note describing the change in my job description, and I thank you for doing so.

For the record: In your response to my note, you say that you OK'd my request for paternity leave. My recollection is that you neither approved it nor denied it, because I withdrew my request before you responded.

So that we don't wander too far from the original issue, let me repeat that I made my 18 August 1997 request because I felt that I was being held responsible for a particular amount of work (my annual article-editing goal) while being made to work so inefficiently that I could not do that amount of work -- at least not with sufficient time left over to take some time off. My revised job description will lessen slightly my need for ready-to-edit articles, and so should provide some relief in this area.

The Riordan manuscript has just arrived, and I would like to work on it now, so as to finish it as far ahead of the deadline as possible. Unless you tell me otherwise, that is what I will do. Perhaps I will take some vacation time later, depending in part on what other work comes in.

From: "Martin L. Perl" <martin@SLAC.Stanford.EDU>
To: Jeff Schmidt <jds@aip.org>
Date: 2 Sep 1997 (Tue) 17:13
Subject: Leptons After 100 Years Article

Dear Jeff

Thank you for changing my ugly duckling of a manuscript into a beautiful swan. You have done a wonderful job.

I have the following comments:

Page 35, column 2: the ***** in "See box 1 on page ****** 36 has not been inserted yet.

Page 39, column 2: the ***** in "See box 2 on page ****** 40 has not been inserted yet.

Page 36, bottom equation in column 2: space required between virtual and Z0.

Page 38, Figure 4: TAU DETECTION scheme might be changed to TAU DETECTION apparatus.

Page 40, Box 2, column i: yes, each h should be an h-bar.

Page 40, References: the names in Ref. 3 are spelled correctly; in Ref. 10 the page number is 2074; in Ref 16 the page number is indeed 79c, it is a conference proceedings and every page has a c added to the page number.

Thank you so much Jeff for all your helpa dn guidance. I am greatly looking forward to the issue.

Sincerely yours

Martin Perl

From: "George Crabtree" <george_crabtree@qmgate.anl.gov>
To: "Judy Barker" <jbarker@aip.acp.org>
Date: 15 Apr 1997 (Tue) 19:24
Subject: Vortex Article

Subject: Vortex Article
Time: 5:26 PM
Date: 4/15/97

Dear Steve, Jeff, Barbara, and Judy,
I just received the offprints for our article on Vortex Physics in the April issue of Physics Today. What fast service! The article looked very good in the magazine, and I got a warm feeling on finally seeing it in print. Thanks to all of you for your efficient and competant efforts to bring the article out. For David and me, it is gratifying to see the fruits of our work appear with such high production standards. Thank you all once again.
Sincerely,
George Crabtree

George Crabtree - MSD/223
Argonne National Laboratory
9700 S. Cass Avenue
Argonne, IL 60439
phone: 630-252-5509
fax: 630-252-7777
e-mail: crabtree@anl.gov

CC: "David Nelson" <nelson@cmt.harvard.edu>

Letter to the Editor
Review Form

MS Number: L-9705-527-U
Author: **Weinstock, Robert**

Title: Comments on "Probing the Faintest Galaxies, April 1997

Review by: **js** Date Assigned: **5/22/97** Date Completed: _____

☑ Accept ☐ Reject ☑ Staff Revise ☐ Author Revise

I think a lot of our readers would appreciate an answer to the question that Weinstock raises. I suggest that we publish a shortened letter (see enclosed edited version) along with an answer from Ferguson.

-JS

Please return to Susan Funk by **5 June 1997**. *Many Thanks!*

Review by : _____ Date Assigned: _____ Date Completed: _____

☐ Accept ☐ Reject ☐ Staff Revise ☐ Author Revise

OK. Get Ferguson's response.

— Steve 6/30/97

Letter to Physics Today:

In "Probing the Faintest Galaxies", by Ferguson, Williams, and Cowie (April 1997), the caption to Figure 1 reads, in part, "For most of the galaxies in the image, we are looking back more than half the age of the universe". This claim seem strange to me; for radiation emitted so long ago must have had its source so close to Earth at the moment of emission — according to the generally assumed big-bang origin of the currently expanding universe — that it would have reached Earth, if at all, well before the era of telescopes, spectrometers, and, of course, us. That this is so springs from the fact that no source can recede from the earth at a speed greater than that of the radiation — namely, c.

To derive this conclusion, let us measure all times and distances relative to Earth's rest frame and let

t = measure of time, from big bang at $t = 0$

T = age of universe (= time elapsed from big bang to Earth's receipt of radiation from source)

θ = time after big bang at which radiation is emitted from source

$\bar{v}$ = average speed of separation of source and Earth from big bang ($t = 0$) to emission of radiation ($t = \theta$).

Thus the total separation of source and Earth at time of emission — i.e., the distance the radiation travels at speed c from source to Earth — must be $\bar{v}\theta$, and the time elapsed during the radiation's journey is

$$T - \theta = \frac{\bar{v}\theta}{c},$$

from which follows

$$\theta = \frac{T}{1+(\bar{v}/c)} .$$

And from $0<(\bar{v}/c)<1$, — i.e., the limiting feature of the speed of light — we conclude

$$0.5T < \theta < T .$$

Any radiation we receive today must have been emitted, ~~therefore,~~ at least half the age of the universe after the big bang.

How, then, if the above analysis is sound, do Ferguson, Williams, and Cowie — along with others — suppose radiation to have reached Earth in the 20th century from a source that was, at moment of emission, farther from Earth than $(cT/2)$? Since they evidently infer emitter distance from the doppler-shift magnitude, a ready-to-mind answer is their use of an erroneous relation between emitter distance and doppler-shift measurement.

If, ~~however,~~ there is something wrong with my analysis ~~above~~, I shall be grateful to have it explained to me.

Robert Weinstock

Robert Weinstock
Emeritus Professor of Physics
Oberlin College
Oberlin, OH 44074
ZWEINSTOCK@OBERLIN.EDU
(216) 775-8337

Jeff: Spurred by your review, we are planning to publish Weinstock's letter [①]; Ferguson [②] suggests we read his response [③] and consider publishing neither. What think you?
/Paul
25 July 97

From: Harry Ferguson <ferguson@stsci.edu>
To: ACP.AIP(pelliot)
Date: 7/28/97 10:37am
Subject: Reply to Weinstock letter

Dear Paul,

Here is our reply to the letter to the editor. Actually, we wouldn't recommend publishing either the letter or our reply, as this sort of basic question about light travel times seems a bit out of place for your letters section. Perhaps you should forward our reply to Dr. Weinstock directly and see if that satisfies him? ②

Sincerely,
Harry Ferguson

SB: Weinstock letter below, followed by Ferguson reply. Ferguson recommends we not publish either. So does Chas. Jeff says otherwise – see next page. I suggest we ask Weinstock if the answer suffices for him; he may feel publication exposes his lack of understanding of cosmology. What say you? Paul 8/13/97

① Weinstock Letter to the Editor

In *Probing the Faintest Galaxies,* by Henry Ferguson, Robert Williams and Lennox Cowie (PHYSICS TODAY, April, page 24), the figure 1 caption reads, in part, *For most of the galaxies in the image, we are looking back more than half the age of the universe.*

This claim seems strange to me. Radiation emitted so long ago must have had its source so close to Earth at the moment of emission*according to the generally assumed Big Bang origin of the currently expanding universe*that it would have reached Earth, if at all, well before the era of telescopes, spectrometers and, of course, us. That this is so springs from the fact that no source can recede from the earth at a speed greater than that of the radiation*namely, c. A simple calculation, in fact, shows that we are looking back through less than half the age of the universe. Can it be that Ferguson et al. are using an erroneous relation between emitter distance and doppler-shift measurement?

If there is something wrong with my analysis, I shall be grateful to have it explained to me.

> @SIGNATURE = ROBERT WEINSTOCK
> @ADDRESS = (zweinstock@oberlin.edu)
> @ADDRESS = Oberlin College
> @ADDRESS = Oberlin, Ohio
>

③ Ferguson et al. reply

The redshift distribution of the galaxies in the HDF is not known precisely, however, a very conservative guess based on Keck spectroscopy of the brighter galaxies and the colors of the fainter galaxies is that more that half the galaxies have redshifts z > 0.8.

The statement made in the caption of figure 1 comes from a

calculation of lookback time to a galaxy at z = 0.8. For a critical-density universe with a cosmological constant lambda = 0, the lookback time is

tau = 2/3 H_0^-1 (1-1/(1+z)^(3/2))

and the present age of the universe is

t_0 = 2/3 H_0^-1

where H_0 is the Hubble constant.

For this cosmology, a galaxy at z = 0.8 has tau = 0.6 * t_0. In other words the lookback time is more than half the present age of the universe.

A general expression for the lookback time with arbitrary values of the cosmological constant and density parameter is given in Carroll et al., 1992, Ann. Rev. Astron. Astrophys., 30, 499 (equation 16).

Henry Ferguson
Robert Williams
Lennox Cowie

Paul —

Weinstock's question should get a physical explanation as an answer, not a mathematical one like this. — say drop the mathematical one, don't just add the physical one to it. Perhaps ask Ferguson & Co. to write what they would say to a high-school student (or radio audience) who noticed this seeming contradiction. One possible reason that Fergie & Co. answered as they did is that they don't really understand the physics.

– Jeff

28 Jul 97

D00416

PHYSICS TODAY

from Stephen G. Benka

Paul,
Forward Ferguson's response to Weinstock. We won't publish either the letter or the response.

Steve 8/14/97

Scientocracy

Vannevar Bush envisioned a brave new world run by scientists.

ENDLESS FRONTIER
Vannevar Bush,
Engineer of the American Century.
By G. Pascal Zachary.
Illustrated. 518 pp. New York:
The Free Press. $32.50.

By Thomas P. Hughes

DURING World War II, Vannevar Bush mobilized America's engineers and scientists, presided over the making of the atomic bombs, advised President Truman on the decision to use them against Japan and, in a memorable essay entitled "Science — The Endless Frontier," formulated a bold policy for the country's postwar cultivation of science and engineering. He defined, as well, the military-industrial-university complex and gave it the impetus that propels it today. As G. Pascal Zachary observes in "Endless Frontier," no wartime figure in the world marshaled such enormous engineering and scientific resources.

Born in 1890 in Everett, Mass., Bush cultivated his scientific interests while a mathematics student at Tufts and a graduate student in electrical engineering at M.I.T. In the 1920's, when American engineering was in transition from the improvisatory pragmatism of the past to the science-based approach of the future, Bush became known for blending traditional scientific values with the emerging professional ones. At ease in the machine shop as well as in the laboratory, he spoke of himself as using both the hand and the head.

M.I.T, which was in the vanguard of this professional transition, adopted Bush as an exemplary faculty member and later named him dean. He won worldwide peer recognition as the foremost designer of electromechanical analog computers. Decades later, his Atlantic Monthly article "As We May Think" spread the notion of mechanizing the storage and retrieval of information, an idea that fired the vision of several computer pioneers. Zachary, a business and technology reporter for The Wall Street Journal, has aptly subtitled his biography "Engineer of the American Century."

Bush assumed that men of brains, judgment and good will would rise to positions of responsibility in the engineering and scientific world. (He was not at all sure that this was true in political and military realms.) An elitist holding high academic standards, he believed that university engineers should reach out to render public service, not only solving problems assigned to them, but helping to formulate policy as well. This agenda would bring him into sharp conflict with the Washington establishment.

After World War II began in Europe, Bush, answering a call from Washington to mobilize engineers and scientists for national defense, put together the Office of Scientific Research and Development. Contemporaries called it the greatest research and development organization in history. Its story has often been told, but Zachary goes deeper to explore Bush's influential and often controversial views on the role of experts in a democracy, an issue that surfaced then and that remains only slightly below the surface now.

Bush and elitist science associates like James Conant, the president of Harvard, sharply criticized the military for not developing strategy and tactics that incorporated new weapons, such as radar and the proximity fuze. Bristling with impatience, Bush used his direct access to Franklin D. Roosevelt, as well as his freedom from Congressional oversight and his huge budget, to bring pressure on generals and admirals to accept scientists and engineers as partners in making policy.

Turf battles were inevitable. The Chief of Naval Operations, Adm. Ernest J. King, a formidable opponent, accused Bush of "trying to mess into things in connection with the higher strategy which were not his business, and on which he could not have any sound opinions." Other officers scornfully dismissed the civilian experts as men without combat experience.

Bush's advocacy of unfettered scientific expertise brought criticism from the politicians as well. The United States budget director, Harold Smith, declared that Bush "is too much influenced by the assumption that researchers are as temperamental as a bunch of musicians, and consequently we must violate most of the tenets of democracy and good organization to adjust for their lack of emotional balance." "Most of them," he added, "do not know even the first thing about the basic philosophy of democracy."

Undaunted, Bush, according to one colleague, talked "straight to generals and cabinet officers and the President," and made them "take it." After fierce confrontations, he would sometimes withdraw in the evenings to Washington's exclusive Cosmos Club and negotiate with his opponents over a bottle of Scotch. He often prevailed.

Jerome Wiesner, John F. Kennedy's science adviser, thought that the 20th century might not again produce Bush's equal in engineering and science policy. Alfred Loomis, a knowledgeable science patron, investment banker and radar expert, concluded that among the men whose death in the summer of 1940 would have caused the greatest calamity for America, Roosevelt was first and Bush would be second or third.

BY war's end, however, Bush was bone-tired, broken in spirit and bereft of influence. Finding the Truman Administration's science policies suggestive of a chapter from "Alice in Wonderland," he left the Government in 1948. In his last great effort, he tried and failed to establish a National Research Foundation, a peacetime replacement for the research and development office, one that would cultivate fundamental science both for military and civilian uses. He wanted peacetime science unfettered by political controls, but failing to perceive a growing call for public accountability, he aroused overwhelming opposition. James V. Forrestal, the first Defense Secretary, observed that "even with both ears to the ground," Bush did "not hear the rumble of the distant drum."

Deeply informed and insightful, Zachary has thoroughly captured the spirit of Bush and his times. In evaluating the man's legacy, he honors Bush as a role model for his generation's engaged engineers. But Zachary is impatient with Bush for resisting people whom he considered government interventionists, intent upon pursuing science primarily for the ill-fed, poorly educated and underemployed. Zachary is surely right in concluding that Bush's single-minded support of elitist universities and his advocacy of the "free play of free intellects, working on subjects of their own choice" would find little support in Washington today. □

Thomas P. Hughes is a professor of the history of science and technology at the University of Pennsylvania and M.I.T.

The New York Times, 26 October 1997

The Washington Post

Advocate of the Atomic Age

ENDLESS FRONTIER
Vannevar Bush, Engineer of the American Century
By G. Pascal Zachary
Free Press. 518 pp. $32.50

By Gregg Herken

ALL that has been written about the making of the atomic bomb tends to ignore the fact that the Manhattan Project was primarily an engineering effort. Historians have lavished most of their attention upon the more temperamental—and hence colorful—physicists involved. Journalist G. Pascal Zachary's *Endless Frontier*, the first biography of an engineer who was once the doyen of America's scientific establishment, takes a major step toward setting the record straight.

Vannevar Bush was a prototypical Boston Yankee whose father was a Universalist preacher and grandfather a sea captain. Bush's flinty persona and wry humor reflected those origins. (His "screwball" first name was borrowed from that of a family friend.) Educated at Tufts and MIT, Bush received a PhD in electrical engineering in 1916 and set about to broaden his horizons: "I resolved to learn about men as well as things."

An inveterate tinkerer, Bush invented before he was 40 a device to detect submarines, a code-breaking machine, a solar-powered pump, and the "differential analyzer"—an early, mechanical version of the computer. In the mid-1920s, he co-founded Raytheon and was made wealthy by the subsequent growth of the electronics giant. In 1939, on the eve of World War II, he became president of the Carnegie Institution in Washington, D.C.

"Bush's greatest invention was not a thing but an organization–the National Defense Research Commitee."

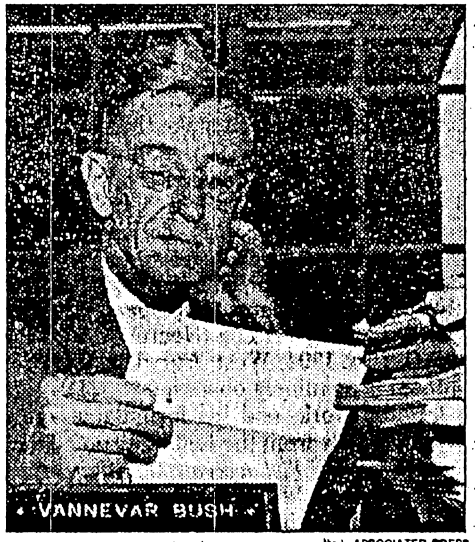
Yet Bush's greatest invention was not a thing but an organization—the National Defense Research Committee—which he and President Franklin Roosevelt created in time to mobilize the country's scientific brainpower for the coming conflict. The quality that Bush typified and that he valued most—the ability "to think straight in the midst of complexity"—was key to his and the NDRC's success in jump-starting the nascent atomic bomb project, which hidebound bureaucrats and flighty physicists had left dead in the water. When a National Academy of Sciences panel dithered as to whether a bomb was possible, Bush added a handful of engineers and sent them back to the drawing board; the panel decided the bomb was feasible after all.

Bush also had the talent to recognize his own limitations. "Most of this was over my head," he readily admitted to physicist colleagues who were probing the mysteries of fission. Accordingly, Bush teamed up with another Bostonian—chemist James Conant, presi- *—Continued on page 5*

Gregg Herken, a historian at the Smithsonian, is writing a book about physicists Ernest Lawrence, Robert Oppenheimer and Edward Teller.

dent of Harvard—whom he described as a "square-shooting, level-headed liberal." The pairing of Bush and Conant created one of the most remarkable intellectual partnerships in the modern history of science and technology, but it receives disappointingly little treatment in this otherwise excellent book. (Readers are advised to consult Jim Hershberg's brilliant biography of Conant, which can be read as almost a companion volume.) When World War II finally arrived, Bush created a larger, umbrella organization—the Office of Scientific Research and Development—and assigned the NDRC to Conant. Together, the duo not only oversaw development of the decisive weapons of victory—radar, the proximity fuse, and the bomb—but also became Roosevelt's de facto science advisers.

"Science—The Endless Frontier" was the 192-page plan for postwar federal support of scientific research that Bush prepared for Roosevelt as victory approached; he intended it as his legacy. Like the NDRC and OSRD, Bush wanted peacetime



Vannevar Bush in 1947

government-funded research to "supplement" rather than compete with work done by the military services. Predictably, however, the Pentagon viewed Bush's plan as a threat, and the cronies and pols who surrounded FDR's successor, Harry Truman, also feared—with some reason—that Bush's real goal was a technocracy, a government by experts. Blocked at every turn, Bush could do little but complain and wax nostalgic about the halcyon days of the war. He finally left the government in 1948.

Over time, Bush's hardheaded pragmatism became an ossified suspicion of the new. He was most famously wrong about ballistic missiles—"I think these things will be just too expensive and inaccurate to use, even if they could be built"—but his attachment to the analog technology of his differential analyzer likewise blinded him to the potential of digital computers, even though he was one of the first to herald the coming of the information age. (In one area, Bush's naysaying may only have been premature. He warned in 1960 that putting people in space was merely a "stunt" that would eventually "bore the public" and "kill some promising youngsters in the process.")

In retirement, Bush was saved from becoming simply a curmudgeon by two courageous acts that received little or no public attention. In 1952, while on a blue-ribbon panel studying disarmament, Bush tried to postpone the explosion of America's hydrogen bomb until the possibility of a ban on such tests could be explored by Truman's successor. Two years later, Bush spoke out in Robert Oppenheimer's defense at the latter's security hearing, where the physicist was being pilloried for his opposition to the H-bomb. While for naught, Bush's heroic stand at the Oppenheimer hearing was arguably his finest hour.

In an era when science as well as history is said to be only a reflection of changing cultural values, Zachary's book gives a glimpse into a simpler time. Vannevar Bush was the exemplar of a generation that has now vanished. Bush evoked the attitudes and standards of that generation when he wrote, in December 1940, of standing "at the mouth of the cave with a few strong men of the clan armed with stone axes against a hostile world." ■

THE WALL STREET JOURNAL.

Arms and the Man

By ERICH EICHMAN

It is odd to think that a man whose face appeared on the cover of Time magazine in 1944, and whose death occasioned a front-page obituary in the New York Times 30 years later, should be all but forgotten today. But such is the fleeting fame of the technocrat. Vannevar Bush was much more than that, of course. He was a pioneering engineer and inventor, an entrepreneur, a visionary and a social philosopher whose "Modern Arms and Free Men" was a 1949 bestseller and whose hymn to science (and appeal for funding), "Science—The Endless Frontier," caused a sensation when it was released in July 1945.

Bookshelf

"Endless Frontier"
By G. Pascal Zachary

But his glory years were spent in Washington heading up various technocratic entities (the Carnegie Institution, the Office of Scientific Research and Development), advising presidents, pulling strings on Capitol Hill, worrying over funding, and overseeing projects, most notably the secret one that produced the first atomic bomb.

In his way, Bush was a precursor of the "Wise Men," the elite insiders who guided U.S. policy in the postwar years. His influence reached its height under Roosevelt and faded precipitously thereafter, but his concerns—the relation of science to government and the military, its role in society—are still very much with us.

No doubt Bush would have welcomed our computer revolution, for he was essentially an optimist who saw technology as a force for good. Most important, during the crisis years of his greatest prestige and authority—when the country was at war or preparing for it—he argued (presciently, convincingly) that science had something essential to contribute to national defense, especially if civilian researchers were allowed to do their work unmolested by military bureaucracy.

Journal reporter G. Pascal Zachary has brought this able, conscientious, energetic and wrongly forgotten man to life in "Endless Frontier: Vannevar Bush, Engineer of the American Century" (Free Press, 518 pages, $32.50). A few excerpts:

In the 1930s: "While innovation was clearly becoming corporatized, Bush still believed that the 'lone researcher often does produce out of thin air a striking new device or combination which is useful and which might be lost were it not for his keenness.' Bush was himself just such an irrepressible inventor. While an astute manager of research teams, he often pursued his grandest intuitions alone. Rapid retrieval of personalized data, stereophotography, typography, internal combustion engines and perpetual motion were just a few of his obsessions. For him, inventing was a calling, a way of life."

At the commanding heights: "Intensely self-assured, [Bush] deferred to no one, save Roosevelt and his mentor, Henry Stimson, the secretary of war. In the heat of war, his penchant for barging ahead worked wonders. The military gave more leeway to him than perhaps any other civilian in the war. Members of Congress granted his every request. 'Never once did we ask for funds and fail to secure them promptly,' Bush later boasted. Legislators rarely even questioned him, and when they did the exigencies of war made it possible for him to duck the tough queries anyway. He never flatly refused to satisfy a politician's curiosity, but rather dared him to comprehend the technical and military issues. Most politicos wisely kept their mouths shut."

The response to Bush's 1945 report: "*Business Week* called *Science—The Endless Frontier* 'an epoch-making report' that is 'must reading for American businessmen.' *The Washington Post* applauded Bush for delivering a 'thorough, careful plan for putting the needed push of the federal government behind our scientific progress.' . . . Only a handful of commentators questioned Bush's basic principle that research deserved broad public funding. *The Wall Street Journal*, for example, argued that tax incentives could achieve a similar result by inducing private industry to spend sufficiently on research."

After the war: "[Bush] shared with other elitists a stark and not altogether distorted view of American society that pitted sober, pragmatic elites against the untutored, volatile masses. For Bush, Truman and his cronies as well as most congressional leaders clearly fell into the 'masses' category. While Truman delighted in casting himself as an ordinary American, Bush—and other elite leaders—tended to view such citizens as irresponsible and sometimes irrational. The elite assumed that the mass of Americans needed patriarchal authority. In Bush's view, civilian technocrats were the solution to the inherent contradiction between the increasingly complicated problems facing government and the nation's democratic traditions. In practice, this meant that the public must pay for experts to make decisions in its name; these experts would brook little or no interference."

Looking back, in the 1950s: "He wondered whether men could 'live without war.' Now that 'the glamour of war is gone,' he asked whether the kind of direct combat 'that once had a real appeal for the red-blooded man' was obsolete. Others had noted that modern technology had made war impersonal and that the 'virile attributes' of war, which enlivened societies in the past, would have to arise from another source. But Bush's romantic yearning for an earlier stage of combat seemed peculiar given his role in exploiting the very technologies that further dehumanized war."

A vivid tale of an American science czar

By David Warsh
The Boston Globe

Commentary

By the 1970s, U.S. industry found itself in a paradoxical situation: 'Awash in theoretical knowledge, it was starved for the basic processes and products that lead to victories in commercial contests,' according to a new biography of Vannevar Bush.

'Roosevelt called me into his office and said, 'What's going to happen to science after the war?' I said, 'It's going to fall flat on its face.' He said, 'What are we going to do about it?' And I told him, 'We better do something damn quick.' "

Those are the words of Vannevar Bush, longtime professor at the Massachusetts Institute of Technology and America's science czar in World War II. They evoke the Washington manners of 1941, when those in positions of responsibility understood that they trod upon a historic stage and spoke such clipped sentences easily.

Bush had served as Roosevelt's science adviser since June 1940, overseeing the development of radar, the computer, the atomic bomb, antibiotics. When Roosevelt asked for a postwar plan, Bush delivered, and in a hurry.

In just four months, he responded with a famous report, "Science—The Endless Frontier," synthesizing the work of a series of blue-ribbon committees. Though much battled over in the corridors of power, it nonetheless became the blueprint for the nexus between government, industry and academia that has lasted to the present day.

More than any other person, it was Bush who designed America's national system of innovation in the post-World War II era: the universities directing basic research, the federal government paying the bills and corporations concentrating on applied research, somewhere in between.

This was a good deal more fundamental than, say, thinking up the interstate highway system or inventing the television networks. It could be argued (leaving democracy aside) that it was the innovation system more than anything else that won the Cold War.

Bush is now the subject of a wonderful new biography by G. Pascal Zachary, "Endless Frontier: Vannevar Bush, Engineer of the American Century." It turns out that nothing he did was as important as what he accomplished in the years between 1939, when he went to Washington, and 1954, when he left full-time government service and returned to MIT.

Yet even Bush's failure to adjust after those great days underscores the importance of the forces he had set in motion. And in Zachary's hands, the human forces behind the strange twists of technological developments are always available for inspection.

Named for his father's roommate at Tufts College, Bush went to Tufts himself. Afterward, with his Tufts roommate, Lawrence Marshall, he started a firm to make radio tubes that they called Raytheon. The firm was a success, but Bush went on to teach electrical engineering at MIT, where he pioneered in developing analog computers. Duty called in 1939.

By far the greatest part of Zachary's book concerns the war years. And here the stories are just too numerous to do more than list. The author's day job is as a reporter for The Wall Street Journal in San Francisco. He has a journalist's eye for color and knack for narrative; he has a historian's ear for deeper concerns.

So he weaves tales of the Manhattan Project with yarns of Bush's association with the Office of Strategic Services; stories of the FDR cabinet with anecdotes from scoundrel time. (One of his finest moments came when he went to bat for J. Robert Oppenheimer, whom he saw as victim of technological differences of opinion.)

It turns out to have been a far more complicated world than Bush had contemplated. Battles over federal funding of science are recounted. Bush favored winding down the military's role in funding science at the conclusion of the war; President Harry Truman overrode him in 1945. When the National Science Foundation finally was created five years later, Bush disclaimed the agency he had imagined. He feared that it was too little, too late.

After leaving government, Bush seemed to shrink in stature. The man who had marshaled forces on a equal footing with Eisenhower, George Marshall and Chester Nimitz suddenly was a voice that found its fullest expression against the new: against guided missiles and satellites, against the race to the moon, against consumerism. He served to good effect on corporate boards, with the pharmaceutical company Merck in particular. His son founded Millipore Filter Co.; he himself raised turkeys in New Hampshire.

The world was far more bottom-up than the top-down world he favored, and, according to Zachary, this had deleterious effects on America's competitive position in the world economy. He writes: "The great defect of 'Science—The Endless Frontier' was its neglect of [industrial] innovation." Science was lionized as the source of all progress; invention and commercial engineering were fobbed off as subsidiary concerns. The result was that by the 1970s, U.S. industry found itself in a paradoxical situation: "Awash in theoretical knowledge, it was starved for the basic processes and products that lead to victories in commercial contests." (Oligopolistic market structure may have had something to do with it, too.)

Nobody knows better than Zachary how it was that, in key industries at least, American businesses fought their way back to positions of global supremacy. His first book, "Showstopper: The Breakneck Race to Create Windows NT and the Next Generation at Microsoft" (now undeservedly out of print), is a remarkable chronicle of the development of a major piece of software.

Its putative hero is Dave Cutler, who was born in 1942, when Bush was at the height of his powers in Washington. Yet by the end of the book, we understand that Cutler (once a top Digital Equipment executive) in his way has been just as effective in welding together a team hell-bent on a fixed objective as was any of Bush's minions in the war—with no higher authority behind Cutler than Bill Gates, the business strategist who built Microsoft on little more than his understanding of what it meant to be the standard.

Gates commands a research and development effort as extensive as any ever commanded by Bush. And the commercialization of research and development that began when International Business Machines moved into computing and American Telephone & Telegraph developed the transistor (and then stood by while Silicon Valley took its development to the next stage) has gone far beyond what he contemplated.

Which just goes to prove the point. Whatever its deficiencies as a plan of action, the outline first sketched in "Science—The Endless Frontier" have evolved into a pretty good map of the territory. The relationships between the regions are better understood. So are the possibilities for failed communication. The boundaries themselves seem a little more finite; the competition for resources a little more intense.

But veterans of a hundred cowboy movies know what happens next. Some guy comes through with a roll of barbed wire, or a motor car, or a machine gun, and it's off to the races again. The frontier is forever closing, at least as originally understood. And new vistas are opening all the time.

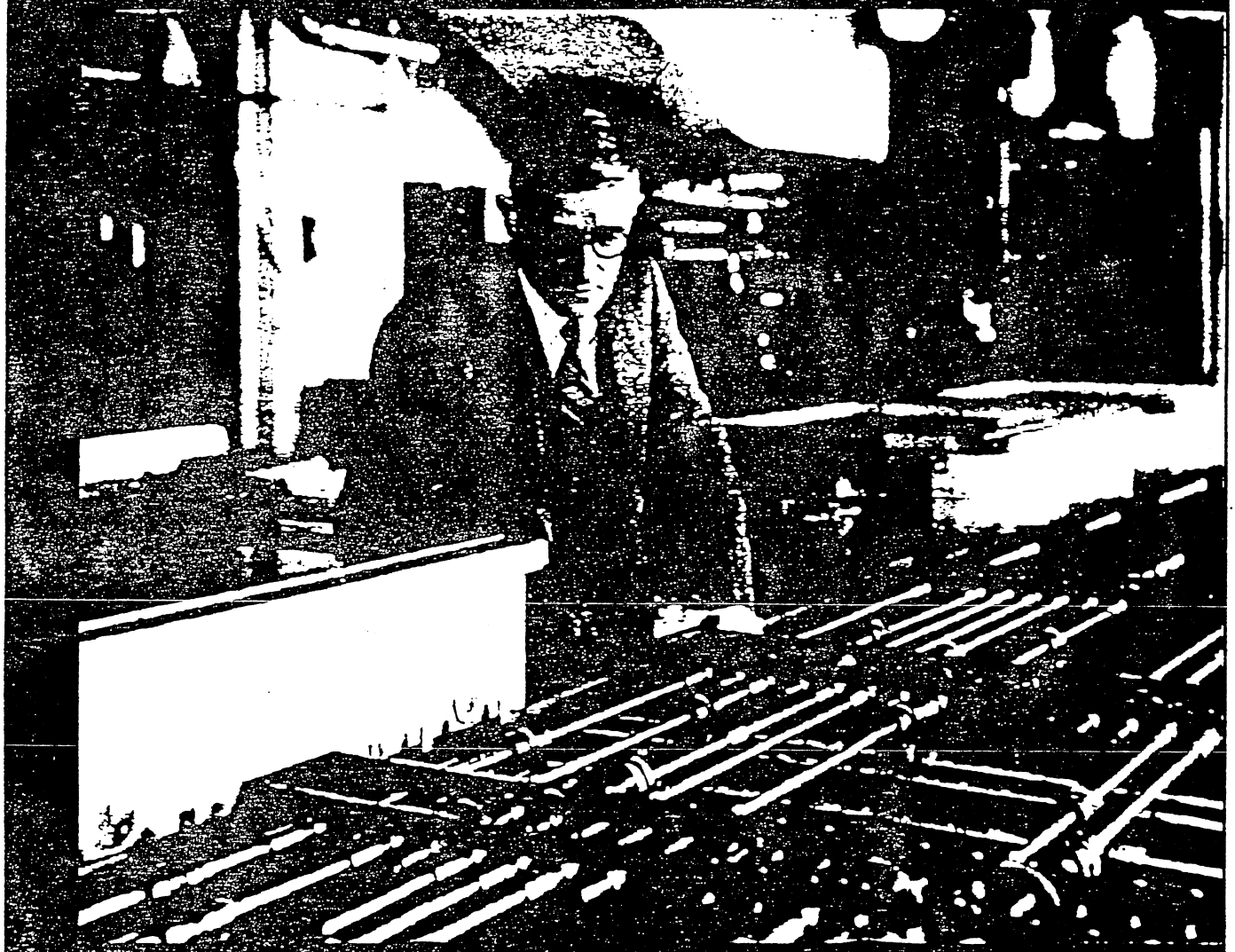
Chicago Tribune, 22 September 1997

San Jose Mercury News, 31 August 1997

SAN JOSE MERCURY NEWS

BOOKS

AUG. 31, 1997



VANNEVAR BUSH AND THE POLITICS OF SCIENCE

INSIDE

Cover Review

A well-engineered life

■ Vannevar Bush devised policies that altered our lives

ENDLESS FRONTIER: Vannevar Bush, Engineer of the American Century
By G. Pascal Zachary
Free Press, 490 pp., $32.50

BY PAUL PREUSS

A CHAMPION of scientific expertise in government, Vannevar Bush's name and face were all over the covers of Time and Fortune and Newsweek in the 1940s, but today — except for the mistaken impression that Bush foresaw the personal computer and the Internet — few remember him. Wall Street Journal reporter G. Pascal Zachary has performed a valuable service with this admirably detailed biography of a man who not only was the 20th century's leading American engineer, but who in a real sense engineered the American century.

How should history judge a man who described many of features of the PC in 1945 and inspired the pioneers of the personal computing movement, but who disparaged digital electronic computation? Bush built an enormous mechanical computer of brass and steel, known as a differential analyzer, as early as 1931. Although he helped found Raytheon in 1924 to manufacture better and cheaper electronic tubes for radios, he never lost his affection for analog computing machines. The memory in Bush's proposed desk-sized "memex" (never built) would have consisted not of magnetic tape or disks but of reels of microfilm.

How should we assess the vision of someone who headed NASA's predecessor organization, the National Advisory Committee for Aeronautics (one of his first acts was to establish a research center in Sunnyvale), but who thought rocketry was a waste of time and did his best to discourage the development of satellites, intercontinental ballistic missiles and moon rockets?

The middle years of the century, the years of World War II when Bush was at his acme, were a fulcrum for our national values, our self-image and our conception of ourselves as a distinctive people in the world. Like his times, Bush was a mass of questions and contradictions. He founded the Office of Scientific Research and Development (OSRD) and fought savage bureaucratic battles with Army and Navy brass to persuade them to invest in weapons

ASSOCIATED PRESS/WIDE WORLD — FROM ENDLESS FRONTIER

Vannevar Bush, shown here in 1942, was a high-profile engineer during World War II.

development. Because of Bush, American radar helped sweep U-boats from the sea, and the proximity fuze made anti-aircraft guns and artillery devastatingly effective.

At first Bush opposed nuclear research, thinking the prospects for a bomb "remote from a practical standpoint." He ended up launching the Army's Manhattan Project. What to think of a man who advised dropping the bomb on Japan, then wanted to share nuclear secrets with the Soviet Union — and who staunchly opposed the development of the H-bomb?

He sounds almost liberal. Not at all. Bush was so conservative he distrusted democracy. Although he was one of Franklin Delano Roosevelt's greatest admirers and closest advisers, he thought the president should be relieved of his burdens by delegating power to a committee of technical experts. During the Communist witch hunts after the war, Bush failed to defend the distinguished scientist E.U. Condon, under attack by the House Un-American Activities Committee, noting that "Commie infiltration constitutes a genuine menace in this country."

A Red baiter, then? Not that easy: He was one of Robert Oppenheimer's staunchest defenders at the 1954 AEC security hearings and a scathing critic of Joseph McCarthy. In 1967, Bush recalled, "Good Lord, I worked with Hoover, Truman, Eisenhower, Roosevelt, Kennedy, and I don't think any of them ever knew what my political philosophy was or were in any way interested in it."

Born in 1890 in Chelsea, Mass., the son of a Protestant minister, Bush began his inventing career while a student at Tufts College, where he earned a patent on a sort of analog computer mounted on a wheelbarrow, a surveying device. After graduate school at the Massachusetts Institute of Technology, he eventually became a professor there, and by 1932 he was MIT's vice-president. Washington, D.C. proved to be but a short step away.

Bush advocated civilian control over military research, but through the OSRD and other organizations he did more than anyone else to establish the military-industrial complex. After the war, his opposition almost sank the National Science Foundation and the civilian-controlled Atomic Energy Commission (today's Department of Energy) — and each had been his own brainchild! Bush was a masterful politician who could threaten and cajole and occasionally deceive to get what he wanted, but he had no constituency except scientists and engineers; having lost the support of younger scientists, his power quickly slipped away.

Virtually discarded by government leaders after World War II, Bush kept an office at MIT and died at home in 1974 at the age of 84. "In hindsight, how does one judge Vannevar Bush?" Zachary asks. "Right or wrong? Good or bad? Success or failure? Such questions certainly would strike Bush as absurd. . . . His was a life not of looking back, but of charging ahead." Maybe a full reckoning of his importance isn't possible. Bush himself liked to say, "It is earlier than we think." ■

Vannevar Bush set up a laboratory in his home when he was a boy.

MIT — FROM ENDLESS FRONTIER

Paul Preuss' new novel is "Secret Passages."

books

An EE who swayed the world

GRANGER MORGAN

Ask most electrical engineers to list who did most to shape the second half of the 20th century, and few are likely to include one of their own: Vannevar Bush, professor of electrical engineering at the Massachusetts Institute of Technology (MIT), co-founder of Raytheon Corp., and civilian director of the massive U.S. R&D effort during World War II. Yet the development of radar, the proximity fuse, effective anti-submarine warfare, and countless other innovations played the decisive role in tipping the balance of the war to the Allies and, in the longer run, in securing democracy as the preeminent form of government for industrialized states at the close of this century.

Endless Frontier: Vannevar Bush, Engineer of the American Century. *Zachary, G. Pascal, The Free Press, New York, 1997, 518 pp., $32.50.*

Bush was born in 1890 in a town just north of Boston, where his father was a Universalist minister, and he grew up in a nearby community to which the family moved in 1892. He was a strong-willed young man, with a "spark of belligerency," who from time to time endured bouts of illness. He showed great promise in mathematics and science, and perhaps just as important, proved adept at building things with his hands.

Biographer G. Pascal Zachary, a senior writer for the *Wall Street Journal*, explains that in "tinkering in his basement, Bush shared an activity with many brainy, middle-class boys around the country. The romance of invention...was contagious... [and] Bush realized that the path of the inventor offered him perhaps the only means of achieving conventional success without sacrificing his maverick leanings."

In 1909, when Bush graduated from Chelsea High, he was an independent-minded, politically conservative middle-class New Englander. He was "impatient with pomp," Zachary reports, an "outsider who resented the elite of society but hungered for recognition too." He went to Tufts University, in Boston, where he earned bachelor's and master's degrees in engineering. On one occasion, he read the textbook for a course in advance and asked the professor if he could cut classes to make some time available for other things, and just take the final exam when it occurred. The professor instead gave him the test on the spot—Bush passed and was granted credit.

After working briefly at General Electric Co., Bush entered a doctoral program at Clark University but then transferred to MIT, where he completed a thesis in the new electrical engineering department in less than a year. In 1916 he accepted a job at Tufts and, in parallel, took a position as laboratory director for American Radio and Research Corp. (Amrad). Three years later he moved to the electrical engineering department at MIT, where he expanded his program of research and industry consulting.

Bush's work at Amrad eventually contributed to the establishment of a new company, Raytheon Corp., which grew rapidly, supplying vacuum tubes for the consumer radio market. Bush prospered along with it.

In 1932 Karl Compton, MIT's new president, made Bush vice president and dean of engineering. While the position gave him wide administrative responsibilities and greater exposure on the national scene, it did not end his research activities or consulting. Much of his research at MIT focused on analog mechanical computing machines (termed "differential calculators") and on "rapid selectors" for searching large physical files (such as banks of microfilm).

As the risk of war grew in the late 1930s, Bush became concerned with laying the R&D foundation for a conflict whose outcome, he believed, would be determined by technological prowess. He had already begun to expand his activities in Washington, D.C., when in early 1939 he was named to head the prestigious Carnegie Institution of Washington, a position that provided the springboard that soon vaulted him to the pinnacle of power.

Bush's appointment in 1940 to chair the National Defense Research Committee (NDRC), which was later transformed into the powerful Office of Scientific Research and Development (OSRD), resulted from vision, good ideas advanced at just the right moment, the right friends, and superb salesmanship combined with technical accomplishment and great administrative skill. Bush built an organization that, while coordinating with the uniformed military services, defined its own research priorities and ran its own show with minimal oversight by the President and Congress.

Bush pioneered new contracting methods that mobilized the nation's top scientists and engineers, with minimal red tape, to address key problems, often in their own laboratories. By 1944 "OSRD was spending $3 million a week on 6000 researchers at more than 300 industrial and university labs." This count does not include the building of the atomic bomb by the Manhattan Project, over which Bush had responsibility through different administrative arrangements.

Readers unfamiliar with the critical role played by Bush and the OSRD in the war effort will find the central 150 pages of Zachary's biography an exciting and invaluable introduction. Details of Bush's skilful wooing and bullying of military leaders such as Admiral Ernest J. King are particularly interesting. I would have preferred a few more technical details, but except for confusion between the capabilities of the German V1 and V2 weapons, those provided are accurate.

Accustomed to wielding great power with remarkably little accountability, in the post-war era Bush found it difficult to adjust to the reemergence of politics-as-usual and bureaucratic regulation. He strongly supported the atomic bomb he had helped create, but he also recognized that the bomb had changed the world, and worked hard, if without much success, to put in place an international regime to manage this threat to security. On the other hand, he was slow to recognize the great strategic importance of ballistic missiles and the military uses of space. This blind spot worked to erode his standing with post-war military leaders.

Bush is widely credited with being the father of the social contract that guided post-war R&D in the United States. He was the principal author of the report, "Science the Endless Frontier," which today is perhaps the most venerated, if rarely read, icon in Federal science and technology policy circles. Zachary's account makes it clear that while many of the ideas that led to the post-war system of Federal R&D originated with Bush, and with OSRD contracting experience, Bush by no means deserves all the credit. Indeed, his strong will, plus his failure to understand the changing political landscape, did much to delay the creation of the National Science Foundation.

In Zachary's account, Bush is an immensely impressive man to whom the country and the Western world owe a great debt of gratitude. He was also human, with an ego, a strong and sometimes abrasive style, and other failings and limitations. These are recounted with an honesty that in no way detracts from Bush's great achievements as an engineer, as an entrepreneur, and as an excellent R&D administrator.

Most of the "big names" in U.S. science and technology policy have started out in science, especially physics. But this fascinating and well-written biography is a reminder that one of the greatest of them all, and perhaps the most influential, was an electrical engineer.

Granger Morgan is the Lord Chair Professor of Engineering at Carnegie Mellon University, Pittsburgh, where he also is head of the department of engineering and public policy and a member of the faculty in electrical and computer engineering.

15 November 1996

Proposals for discussion at Physics Today retreat

The following proposed agenda items are in the spirit of Steve's invitation to put our concerns "on the table." This list was put together by some of the staff, based on discussions among staff members. The theme of these proposals derives from the main points raised by the Physics Today advisory committee: openness, staff empowerment and editorial efficiency. The proposals address issues that are very important to at least some of the staff, and they are intended to provide a basis for discussion. Each proposal is subject to adoption, modification or rejection during the retreat. PLEASE ADD TO THE LIST.

1. Agreement that we want to keep all the present staff members.

   -- Security is a prerequisite for speaking freely, sharing ideas and experimentation.

2. Openness.

   -- Recognize that all staff members are legitimately concerned about all aspects of the magazine -- both content and process.

   -- Proposed changes in magazine's content or process should be announced to the staff and discussed.

   -- Make letters to the editor available to all staff.

3. Volunteer reporters -- a staff-based information system.

   -- Reporter gathers and disseminates information on progress toward agreed-upon goals. Not intended to replace management's information system. (Example: reporting on progress toward hiring someone to categorize books.)

4. Problem resolution: Editorial and other.

   -- Editorial judgment: Burden of proof on critic.

   -- In disputes, staff members are encouraged to consult others on staff.

5. Distribute work according to staff interest.

   -- Adjust job descriptions of yet-to-be-hired editorial and secretarial staff members based on current staff interests.

6. Physics Today management should act in a way that leads staff to see them as their advocates rather than as the local representatives of higher management.

   -- Advocates in editorial controversies.

   -- Advocates in annual reviews.

7. Voluntary staff participation in hiring.

   -- Participate in writing job advertisements.

   -- Examine resumes.

   -- Talk to candidates.

   -- Offer recommendations.

8. Take affirmative action to increase diversity of Physics Today staff.

9. Allow staff to solicit outlines for articles.

10. No need for detailed schedules.

(Distribution: All PT staff and managers.)

5 November 1997

Marc,

Thank you for asking me to meet with you today about my statement to the Physics Today advisory committee that the magazine has failed to live up fully to its claim that it is an affirmative-action employer.

I am taking this opportunity to outline the history of the issue at the magazine and to discuss the important difference between equal opportunity and affirmative action.

At a November 1996 Physics Today meeting, some of us on the staff raised the issue of affirmative action and the lack of diversity at the magazine. Several weeks earlier, one of the Physics Today editors had submitted his resignation, thus presenting us with an immediate opportunity to work toward correcting the problem. At the meeting, I said I would help monitor the situation in the future, as did Jean Kumagai, who is the only minority among the 18 individuals who work at Physics Today.

On 14 April 1997 the Physics Today staff learned that out of the 85 applicants for the editorial opening at the magazine, three had been selected to come in for interviews -- all white males. Among the 85 applicants were a number of potentially qualified minorities and women. Jean and I argued that if Physics Today were truly committed to affirmative action, it would also bring in some of these applicants. That could have been done easily, but Charles Harris and Steve Benka refused, saying that it was not worth the delay of a week or so that it would cause. We felt that this revealed Physics Today's priorities (and AIP's, too, because Charles had told us that he had discussed the institute's affirmative action policy with Terri Braun after the November 1996 staff meeting), and that affirmative action clearly was low on the list.

The decisive factor turned out to be that while Charles believes in equal opportunity, he does not believe fully in affirmative action. He told me, for example, that he would not hire a minority who is qualified to do the job unless that individual was <u>more</u> qualified than all 84 of the other candidates. Such a policy can lead to an all-white staff even though many minorities are qualified to do the work. For reasons outside of our immediate control, qualified minorities are less likely to have credentials beyond those needed to do the work. Thus, the qualified minorities are passed over in favor of white applicants who have such superfluous credentials. The result is a staff that doesn't look like the population of people who are qualified to do the work. Thus the Physics Today staff does not look like the physics community, the journalism community, the Washington community or the nation as a whole. As long as Physics Today fails to embrace affirmative action, minorities will continue to be in the subset of applicants

deemed qualified to do the job, but rarely among those actually hired. Thus "equal opportunity" amounts to a de facto "whites only" hiring policy at Physics Today. Historically, affirmative action was instituted to overcome this shortcoming of equal opportunity.

Charles also told me that staff diversity is of no value to the magazine -- except to make the office a more interesting place to work. Therefore the fact that a particular job candidate would contribute to the diversity of the staff counts for nothing, he said.

My own concern about affirmative action at Physics Today was heightened when AIP and the magazine relocated from New York City to College Park four years ago. To fill the editorial openings created by the move, the magazine hired three individuals, all white males -- Ray Ladbury, Denis Cioffi and Steve Benka. None of the three had any journalism experience, but the magazine was willing to train them. (One could view this as an affirmative action program for white males.) If the magazine is willing to hire and train potentially qualified whites, then why not do that for minorities, too?

The managers at Physics Today made two token gestures in response to the pressure that we applied: They told a few organizations of minority scientists about the job opening, and, after they filled the position with a white male, they phoned a few of the minorities whom they had judged to be "promising candidates."

Ever since my disagreement with Charles over affirmative action at Physics Today, he has treated me a little bit like an unwelcome troublemaker. You should be able to verify any point that I have made in this note without attributing it; by doing it that way, you can avoid exacerbating this problem.

AMERICAN INSTITUTE OF PHYSICS

One Physics Ellipse
College Park, MD 20740-3843

Tel. 301-209-3100
Fax 301-209-0843

1996 AFFIRMATIVE ACTION PROGRAM

FOR

AMERICAN INSTITUTE OF PHYSICS

Program completed by: Theresa L. Braun

Theresa Braun
Director of Human Resources and
EEO Coordinator

Address: One Physics Ellipse
College Park, MD 20740-3843

Program approved by:

Marc H. Brodsky
Executive Director/CEO

This Affirmative Action Program is effective from January 1, 1996 to December 31, 1996.

D00429

AMERICAN INSTITUTE OF PHYSICS

INTER - OFFICE MEMORANDUM

July 11, 1996

TO: Theresa C. Braun

FROM: Melinda Underwood

SUBJECT: Affirmative Action--1995

Below are the area in which AIP had underutilization in 1995:

Senior Managers	Female and Minority Underutilization
Senior Professionals	Female Underutilization
Other Professionals	Minority Underutilization

Let me know if you want to develop a narrative discussion of goals for the Affirmative Action Plan for 1996-1997.

The American Institute of Physics--Discussion of Goals (1995)

After analyzing our Affirmative Action plan and looking at the utilization analysis, it has come to the attention of the American Institute of Physics (AIP) that underutilization of minorities and females exist in the following job group:

Senior Managers (101)	Female and Minority
Sr. Professionals (201)	Female
Other Professionals (202)	Minority

The American Institute of Physics has been and will continue to be an equal opportunity employer. Our goals for increasing utilization of the above groups will include:

- Broadening the scope of our recruiting efforts. This will include expanding our recruiting outlets and resources such as utilizing the Internet, Department of Labor, and community resources for job postings.
- Exploring diversity training and continue to monitor hiring process. AIP is looking into offering diversity training for hiring managers and supervisors.
- Examining and identifying internal candidates for open positions and career development. This will include continuing cross job training, development of skills, and promotion of existing tuition reimbursement program.

RESPONSIBILITY FOR IMPLEMENTATION

A. Executive Management Responsibility

As the representative of executive management, the EEO Coordinator has primary responsibility and accountability for implementing, directing and monitoring this Affirmative Action Plan.

1. Implementing the affirmative action programs set forth in this Plan, including the development of policy statements and related internal and external communication procedures to disseminate those policy statements.

2. Developing and supervising the presentation of our equal employment opportunity policy during the supervisory training and new employee orientation programs, which may include question-and-answer sessions for supervisors and employees answering their questions about this Affirmative Action Plan.

3. Designing and implementing an audit and reporting system that will accomplish the following:

   (i) Measure the effectiveness of our affirmative action programs.

   (ii) Indicate when remedial action is needed.

   (iii) Determine the degree to which our goals and objectives have been attained.

4. Advising management and supervisory personnel on developments in the laws and regulations governing equal employment opportunity.

5. Serving as liaison between the Company and all enforcement agencies.

6. Identifying problem areas and establishing goals and objectives to remedy underutilization in major job groups, if any underutilization exists.

7. Conferring with community organizations representing women, minorities, veterans, the disabled and older workers.

8. Auditing periodically our on-the-job training, hiring and promotion patterns to remove impediments to attainment of the Company's goals and objectives.

9. Rating supervisory employees based, in part, upon their efforts and success in furthering the goal of equal employment opportunity, and informing supervisory employees of this evaluation practice.

10. Discussing periodically the Company's commitment to equal employment opportunity with managers, supervisors, and employees. During these discussions, the EEO Coordinator will stress the importance of affirmative action, as well as nondiscrimination.

11. Reviewing the qualifications of all employees to insure that minorities and women are given full opportunities for transfers, promotions and training.

12. Providing access to career counseling for all employees.

13. Conducting periodic audits to ensure that the Company is in compliance with federal and state laws and regulations requiring:

    (i) Proper display of posters explaining the Company's obligation to engage in nondiscriminatory employment practices.

    (ii) Integration of all facilities which we maintain for the use and benefit of our employees.

    (iii) Maintenance of comparable facilities, including locker rooms and rest rooms, for employees of both sexes.

    (iv) Providing full opportunity for advancement and encouraging minority and female employees to participate in educational, training, recreational and social activities sponsored by the Company.

14. Counseling supervisors and managers to take actions necessary to prevent harassment of employees placed through affirmative action efforts and to eliminate the cause of such complaints. Further, the EEO Coordinator will

counsel supervisors and managers not to tolerate discriminatory treatment of any employee by another employee or supervisor and to report all complaints or incidents to him.

15. Establishing an internal complaint system that will enable employees to discuss complaints with the EEO Coordinator whenever they feel that they are being discriminated against on the basis of race, color, religion, sex, national origin, disability or veterans' status.

16. Serving as liaison between the Company and community organizations representing minorities, women, veterans, the disabled and older workers.

17. Developing expertise and knowledge of equal employment opportunity guidelines and regulations in order to advise and update top management and supervisory personnel concerning developments affecting our equal employment opportunity program.

B. The Responsibilities of Supervisors and Managers

All supervisors and managers must share in the day to day responsibility for implementing the affirmative action programs set forth in this plan. Specifically, they must endeavor to:

1. Respond to inquiries about our Affirmative Action and Equal Employment Policy, after consulting with our EEO Coordinator.

2. Assist our EEO Coordinator during the investigation of allegations of discrimination.

3. Participate in recruitment and accommodation efforts designed to enable disabled individuals, disabled veterans and others to secure employment and to advance to positions for which they are qualified.

4. Ensure that all federal and state posters explaining the laws prohibiting discrimination are properly displayed.

5. Participate in the development and implementation of affirmative action programs.

DISSEMINATION OF EQUAL EMPLOYMENT POLICY

I. Internal Dissemination

The Company will take the following actions to disseminate its Affirmative Action and Equal Employment Policy, as appropriate, on a regular and continuing basis.

A. Including the Affirmative Action and Equal Employment Opportunity Policy statement in its policy manual and employee handbook, as published. A copy of our EEO Policy, which is contained in our Employee Handbook, is attached at the end of this section.

B. Meeting with supervisory personnel to explain the intent of the Affirmative Action and Equal Employment Policy and their individual responsibilities for its implementation. We conducted supervisory training for all management about equal employment opportunity, affirmative action and sexual harassment during Plan Year 1995 and have continued the training into Plan Year 1996. We have attached information relating to our supervisory training at the end of this section.

C. Scheduling special meetings with employees or using Company newsletters to discuss and explain individual employee responsibilities or opportunities under the affirmation action program. During the current plan year we will be conducting

training for all employees about our affirmative action program and equal employment opportunity in the workplace.

D. Discussing our equal employment policy during any orientation programs we hold, at which time all new employees (and if applicable, transferred and promoted employees) will be advised of our commitment to affirmative action and equal employment opportunity. Our Affirmative Action and Equal Employment Opportunity Policy statement and policy statements affirmatively supporting the employment of minorities, veterans, the disabled and women will be explained during these sessions. During these orientation sessions a management representative from various areas of the Company, including Human Resources, explains the function of their department. Our Affirmative Action and Equal Employment Opportunity Policy statement and policy statements affirmatively supporting the employment of minorities, veterans, the disabled and women are explained during these sessions. We have attached at the end of this section an "Overview of New Employee Orientation Process", which includes a copy of our "New Employee Checklist," and addresses equal employment opportunity and affirmative action in the workplace.

E. Posting the Affirmative Action and Equal Employment Policy, along with all required State and federal informational posters, on our bulletin boards, and updating such posters as required. Our "Affirmative Action and Equal Employment Opportunity Policy Statement", "Invitation to Vietnam Era and

IDENTIFICATION OF PROBLEM AREAS (DEFICIENCIES) BY ORGANIZATIONAL UNIT AND BY JOB GROUP

I. UNDERUTILIZATION

The EEO Coordinator conducted a Utilization Analysis for the 1996 Plan Year in which she compared the workforce representation of minorities and females to their statistical availability by job group. The Utilization Analysis led the Company to identify the following areas of underutilization:

> Females are statistically underutilized in job groups 101 (Senior Managers) and 201 (Senior Professionals).
>
> Minorities are statistically underutilized in Job Group 202 (Other Professionals Technicians).

The Company is addressing these potential problem areas by establishing goals which we will attempt to achieve through specific action oriented programs, which are described in the section of this plan entitled "Action Oriented Programs." Our Utilization Analysis and Goals are contained behind the tabs, so named, in this affirmative action plan.

II. ADVERSE IMPACT

To determine if our selection procedures have an adverse impact upon minorities and females during the first six months of our 1996 Plan Year, we conducted an adverse impact analysis upon our selection decisions. We compared the selection ratios of minorities and females to those of non-minorities and males, respectively, in the areas of hiring, promotion and termination. Through this analysis we discovered no areas for this time period of statistically significant adverse impact.

As a result of our adverse impact analysis, we examined each of the selection decisions that occurred in job groups where adverse impact was discovered as described in the Action Oriented Programs section of our plan. Furthermore, a full impact ratio analysis of our selection decisions and a narrative discussion of the legitimate business reasons supporting our decisions is found behind the "Jaar Analysis, Impact Ratio Analysis and Placement Analysis" tab.

III. IN GENERAL

In addition to the above, the EEO Coordinator will, on an annual basis, as applicable, identify potential problem areas in the total employment process, which may include review of the following areas:

A. Composition of the workforce by minority group status and sex.

B. Composition of applicant flow by minority group status and sex.

C. Overall employee selection process including position specifications, application forms, interviewing procedures, test administration, test validity, referral procedures, final selection process, and other employee selection procedures.

D. New hires, promotions, terminations, etc.

E. Utilization of training, recreation and social events and other programs that are sponsored by the Company.

F. Technical phases of compliance with laws prohibiting discrimination in employment and promoting affirmative action programs, e.g., retention of applications, notifications to subcontractors, etc.

G. "Underutilization" of minorities or women in specific job groups.

H. Lateral or vertical movement of minority or female employees occurring at a lesser rate than that of non-minority or male employees.

I. The selection process eliminating a significantly higher percentage of minorities or women than non-minorities or men.

J. Application and other preemployment evaluation forms or procedures not in compliance with federal or state law.

K. Position descriptions inaccurate in relation to actual functions and duties of that particular job.

L. De facto segregation, by race or sex, existing in job titles or job groups.

M. Seniority provisions contributing to overt or inadvertent discrimination by minority group status or sex.

N. Non-support of our affirmative action and equal employment programs and policies by managers, supervisors or employees.

O. Minorities or women significantly underrepresented in training or career improvement programs.

P. Lack of formal techniques for evaluating effectiveness of the programs set forth in this Plan.

From: Susan Funk
To: SBENKA, JBARKER, GCOLLINS, PELLIOT, TFEDER, CHARRI...
Date: 18 Sep 1997 (Thu) 13:29
Subject: Additional Agenda items...

I have been asked to e-mail this to all of you.

-- Susan

Here are some critical topics we would like to see on the agenda for next week's Content Retreat.

(1) Revised editorial structure: implementation of the long-deferred editorial board to increase staff's participation in editorial function and decision making.

While some may regard this as "process" and not a valid part of this "content" retreat, this step is essential for any meaningful changes in content to be successfully implemented. PT has a highly talented staff that is frustrated by the current structure, which prevents the staff from making a significant and ongoing contribution to enhancing the magazine's quality. Implementing the editorial board is the best way to make the magazine's content more timely, lively, and interdisciplinary.

All the editorial staff should be part of the editorial board.

(2) Revised outlook: an outlook that is more independent, more daring, more thought-provoking, more representative of diverse views in the physics community, more appealing to younger readers, more responsive overall not just to our current readers but to the additional readers we would like to have, more competitive.

(3) Added functions: to provide a forum for debate, to discuss openly issues relevant to the physics community (including controversial or contentious ones), to underscore the social context and relevance of physics.

(4) Added department: creation of "reader viewpoint" feature in which PT publishes reader responses to questions formulated by the staff.

How this would work: In one issue we publish the topic on which we want readers to give their opinions. In a later issue, we publish a representative sampling of those opinions. Such a feature would create a lot of reader interest and could play a valuable role in the society of physicists. Our topics and the subsequent opinions could become the talk of physics coffee rooms and pre-colloquium gatherings.

(5) Revised departments: discontinue reporting of awards and job changes.

The undersigned believe that it is essential that these topics be discussed at the content retreat.

Judy Barker, Graham P. Collins, Chas Day, Paul Elliott, Toni Feder, Jean Kumagai, Elliot Plotkin, Jeff Schmidt.

16 March 1998

Dear Graham,

At the Physics Today staff meeting on 3 March, the editor announced your upcoming departure and called it simply "the big news." We found that characterization offensively neutral. The resignation of a dedicated, long-time staff member is not just "news"; it is a huge loss for both the staff and the readers of the magazine, and it is a failure on the part of the magazine. We are extremely sorry you are leaving Physics Today.

The fact that those in charge are not encouraging you to reconsider is consistent with their behavior toward you over the months, and it leads us to believe that they are not 100% unhappy about your resignation. We think they are fully aware and appreciative of your extraordinary dedication and hard work. But we think they nevertheless have mixed feelings about your presence on the Physics Today staff because you have been an outspoken voice for change at the magazine. We share your frustration over management's continued resistance to badly needed improvements, and so we find your decision to resign quite understandable. Nevertheless, we are sorry to lose you.

Of course, driving away people who point out problems will make for a seemingly smoother operation. But such maintenance of appearances comes at a very high price, because problems that are not clearly exposed cannot be adequately addressed or corrected. We have all seen this in the grossly mismanaged effort to prepare the 50th anniversary issue of the magazine. After each of the many meetings that we have had on this special issue -- meetings at which staff suggestions have been routinely ignored and important decisions routinely deferred -- staff members have whispered to each other privately, in the strongest possible terms, about the absurd amount of time and money being wasted. Nearly everyone agrees that the effort is being grossly mismanaged, but because no one has felt safe enough to bring the matter out into the open at a meeting, there has been no real discussion of how the effort could be better organized and executed. And so after all this time the managers have done nothing to improve the way it is being managed.

During the past year, Physics Today management has moved toward a more repressive work environment and toward a love-it-or-leave-it policy. As you know all too well, there is now much less pretense that "improve it" is a realistic option. Management has become suspicious of anything that could lead to change, and they act against it no matter what the cost to morale or to the readers and the physics community. Take, for example, Steve Benka's recent order forbidding private conversations between staff members at work and declaring that all conversations between staff members must be open to management supervision. Although

Charles Harris later told someone on the staff that this totalitarian measure would not be enforced, it has not been officially retracted, and so the chill remains.

Almost four months ago the Physics Today advisory committee warned that "PT could experience severe losses in its editorial staff if morale issues are not being addressed or are being addressed in a cursory manner. This issue needs continued and heightened attention from management." Physics Today management chose to ignore this warning, and now with your departure we are suffering the predicted consequence. (The magazine's loss of Susan Funk, who quietly cleaned out her desk on Friday 6 March and never came back, was also the result of frustration, we think, with the impediments to fashioning her editorial assistant position into something more than a dead-end job.)

Those in charge should not forget that Physics Today is a trust of the physics community. To needlessly lose dedicated and experienced staff members, especially those who make the extra effort to improve the magazine and the workplace, is to squander the physics community's valuable resources.

We hope some way will be found to keep you at Physics Today, although we realize that this is unlikely to happen. We have been fortunate to have you as a colleague, and we gained much from your honesty and insight. We hope you keep up the spirit in whatever you do.

SB working copy

27 April 1998

To: Theresa Braun, Director of Human Resources, and James Stith, Director of Physics Programs, American Institute of Physics

From: Jeff Schmidt, Senior Associate Editor, Physics Today

Subject: My 1998 performance review

I am writing to ask that my 1998 performance review be redone. Physics Today editor Stephen Benka wrote the review under the direction of Physics Today publisher Charles Harris. I discussed the review with Benka, who, after consulting with Harris, refused to make any of the revisions that I requested. Therefore I am appealing to you to produce a new review. The review was not conducted in accord with American Institute of Physics policy or procedures, and the result is not a fair assessment of my work as a feature articles editor at AIP's Physics Today magazine. I am asking you to produce a new review not just in the interest of accuracy, but also as a necessary affirmation that in the future the American Institute of Physics will treat its employees fairly.

The review lowers my performance rating from last year's "4" ("Exceeds Job Requirements") to a "3" ("Meets Job Requirements") even though this year I did more work and more innovative work. Producing feature articles for the monthly magazine is a team effort, and I think that the many staff members with whom I work will testify that my work is better than average.

The biased review that I received is punishment for my organizing activity at the magazine. It is one of a number of recent reprisals for -- and moves to stop -- such activity, in which I have played a leading role in the interest of both the magazine's staff and the physics community. The central retaliatory feature of the review is that it makes what it admits are "new demands," which amount to a sharp increase in my workload.

I have had 17 performance reviews since I began working at Physics Today in March 1981, but until now I have never needed to write a response to one. This time, however, not only is the review inaccurate, but my supervisor, editor Benka, presented it to me with the attitude that performance reviews at AIP are not done with employees, but are done to them. This violates both the letter and the spirit of AIP policy. He acted as if he were not permitted to change the review in any significant way, and so his discussion of its contents was only pro forma.

In this memo I will first describe some of the ways in which the review is inaccurate, and then I will explain how

it is a reprisal for my organizing activity and part of a series of recent attempts to stop me from engaging in any further collective activity at the magazine.

Review inaccurate

I will go over every sentence of the performance review and show how the review plays down or completely leaves out my accomplishments while contriving deficiencies and playing them up. The review has four sections: three sections focusing on my major areas of work responsibility and one section of additional comments.

Article editing

(4)

Concerning my article editing work, the review states that "Jeff's articles are generally ready on time and are often early." This plays down my accomplishments and does so deliberately, because management keeps records of deadlines and work-completion dates and is fully aware of what I have done in this regard. The words "generally ready on time" must be changed, because my articles were always ready on time and never delayed an issue of the magazine. And the words "often early" must also be changed, because my articles were almost always early and were often very early.

Check! f closed on day "zero"

This is not to say that management can reasonably hold me responsible for the final completion dates of the articles that I work on. They cannot, because the publication process depends upon the work of the magazine's editor and many coworkers, over whom I have no authority. What my review should note is that I always did my part as fast or faster than can reasonably be expected, and certainly much faster than average. At one point during the year, for example, I had two feature articles ready to go to the printer more than a month before the deadline (discussed further in the following two paragraphs). As far as anyone can remember, this had never been accomplished before at Physics Today. My articles came close to the deadline only when the editor failed to meet his deadline for obtaining the articles and giving them to me to edit. I ask that you rewrite this part of my performance review and increase the numerical rating to reflect the resulting more accurate appraisal. I am asking you to do this not just to make my review more accurate, but also to assert that it is not AIP policy to begrudge an employee praise when it is due, even if AIP has a grudge against that employee.

On the issue of deadlines, I would like AIP to use its own performance as the standard for comparison. AIP gave me my performance review more than five weeks late, missing its mid-February deadline and then not even completing the review by the middle of the following month. Benka dated my review 12 March, signed it on 23 March and gave it to me on 24 March.

(5) One big reason that I did more work this year than last year was because management stated that it wanted the magazine to have a backlog of feature articles that were edited and completely ready to be sent to the printer. I supported this goal and produced such articles, but this unprecedented accomplishment is not mentioned in my performance review. Management is fully aware of my accomplishment, as evidenced by the fact that they praised it at a staff meeting.

Working way ahead of the deadline has the potential advantage of avoiding some major inefficiencies (described in the following paragraph), but doing so turned out to involve extra work, because although management asked for and praised the result, they did not support the effort while it was underway. It was left to me to bring about the (6) changes in the workplace necessary to work ahead. The editor consistently maintained a crisis mentality, always giving priority to work for the next issue -- which he always worried would be late -- over work for future issues. Because the work of most employees on a forthcoming issue doesn't end until around the time that the issue goes to press, the editor, with his crisis priorities, never deemed it reasonable to work on later issues. I was able to accomplish management's goal of completing work ahead of schedule only by working directly with the staff team that actually does the work (Rita Wehrenberg, editorial assistance; Paul Elliott, copy editing; Elliot Plotkin, art work; Judy Barker, proof reading; Carol Lucas, photo permissions), and carefully avoiding coming to the overly insecure editor with questions of work priority. I ask you to add this accomplishment to my performance review and raise the numerical rating to reflect the resulting less biased appraisal. I ask you to do this not only to make my performance review more accurate, but also as a way of saying that AIP does not condone biased appraisals of employees.

(5) Another big reason I did more work this year was the inefficiency caused by the magazine's periodic exhaustion of its supply of feature article manuscripts that are ready to edit for publication. It is Benka's responsibility to obtain articles for the magazine. The shortage of articles resulted in a very uneven work flow and forced me to edit some articles close to the deadline, which often meant editing in parallel with the author's making revisions. It is easy for the editor to say "just work in parallel," but such work often necessitates reediting material that the author changes and discarding edited material that the author removes, and a host of other problems. The shortage of articles led me to write to the editor in the middle of the year asking for more work. (See attached memo of 18 August 1997.) (7)

The numbers given in the performance review are all wrong. The review says that this year I "was asked to produce 16-18 articles." In fact, the agreed upon rate was initially 16 per year, not "16-18," the precise meaning of which is not at all clear since there presumably is no upper limit. Benka and I later in the year agreed to reduce the annual rate to 14 and increase the amount of work that I do in areas other than editing, yet the number "14" never appears in my performance review. I ask you to correct this.

"14" (8)

As far as the article editing part of my job goes, my production rate is supposed to be measured by the number of articles published in the magazine in the issues March 1997 through February 1998, as is written at the top of the review form. During that year I edited 13 articles (Mahan, Ferguson, Crabtree, Crowley, North, Parsegian/Austin, Harris, Soulen, Libicki, Perl, Ross, Riordan, Mourou), one of which (the Parsegian and Austin combination article) should count as more than one because making it happen involved a lot of extra work. (More about that article below.) Although this is less than the agreed upon goal, it should be deemed acceptable because of the shortage of articles (AIP should not hold employees responsible for doing work that is not available to do) and because of the extra work caused by that shortage and by management's lack of support for working ahead. Please correct the accounting in this part of the review.

See documentation (9)

The review gives an incorrect reason (a personal reason) for the mid-year change in my job description. The reduction in my article editing goal from 16 to 14, and the corresponding increase in my work following up with authors on articles that have been solicited, was prompted by the magazine's shortage of articles. On 18 August 1997 I gave Benka a note (attached) asking for more articles to edit. On 19 August 1997 he answered with a very defensive note (attached) blaming me in part for the magazine's shortage of articles and at the same time denying that there was any such shortage. He claimed that I was in part to blame, because following up on solicited articles was part of my job. On the same day (19 August 1997) Benka secretly altered my job description, adding truth to his claim that solicitation follow-up was a significant part of my job. When I discovered the change, he and I discussed it and I agreed to make solicitation follow-up a bigger part of my job. I asked him to write me a note saying that my job description had been changed (see 25 August 1997 note from Benka, attached).

See (10) documents

The change in my job description, while made official in the middle of the year, should be considered retroactive to the beginning of the year, because the problem it addressed was long-standing and I had long before addressed it on my own: The shortage of articles to edit had already

led me to shift some of my work from editing to solicitation follow-up. Solicitation follow-up is an area in which I make valuable contributions to the magazine. This often time-consuming work includes giving feedback to authors and working closely with them to develop greatly improved articles for the magazine.

Finally, on 2 September 1997 I gave Benka a note (attached) explaining that solicitation follow-up was not the weak link in the magazine's feature article operation. That note, the contents of which Benka never disputed, is an important part of this appeal about my performance review, and as such, I ask you to read it. Please remove from my performance review the incorrect reason given for the change in my job description, and add a statement concerning the magazine's shortage of articles, because it played a crucial role in my work last year.

(11)

Can't do it.

My work on the Parsegian/Austin combination article is one of many examples of how my performance review leaves out major contributions that I have made to the magazine (while carefully including minor, largely contrived, deficiencies). Physics Today was planning to publish in its July 1997 issue a manuscript by V. Adrian Parsegian of the National Institutes of Health, but the article received a highly negative appraisal from the magazine's external reviewer, Robert H. Austin of Princeton University. This caused a crisis, because the magazine had no article to substitute -- having completely run out of articles -- and because there was no time for Parsegian to make the extensive revisions that were called for by the reviewer.

Editorial Calendar article

Based on the nature of Parsegian's article, the nature of Austin's review and my confidence in the critical abilities of the magazine's readers, I suggested a solution: Publish the article and the review. This was unprecedented at Physics Today, but the editor followed my advice, in part because no other solution was apparent. I edited the combination article and review and handled the delicate and protracted negotiations between Parsegian and Austin, who did not trust each other. The solution was innovative, the result was outstanding and the magazine survived a crisis without damage. In fact, the result was better than it would have been had there been no crisis, because the crisis allowed the magazine to break with tradition. Yet the managers, who seem this year to have developed photographic memories for negative things (real or contrived), have completely forgotten about my special contribution to the magazine during the Parsegian crisis. I ask that my work on the Parsegian/Austin article be described on my annual review, as an example of my valuable advice and above-average work. And I ask that my numerical rating be raised to reflect the new, unbiased text.

(12) OK

You might think it strange that even though the review states that I edited enough articles during the year, it

lists the names of some articles that I didn't edit -- articles that were never assigned to me and that I was not expected to edit. That list appears on my performance review as a defensive measure by the editor -- to bolster his claim that under his editorship the magazine does not experience shortages of articles. Soliciting a sufficient number of articles for the magazine is the editor's job, and so the appropriate home for arguments that he has succeeded is the "Employee's Comments" section of his own performance review. Please remove the sentence and its negative connotation from my performance review. (For a discussion of how the list is not even what it claims to be, see the fourth paragraph of my memo of 2 September 1997.) Such lists do not appear on the performance reviews of other employees. The performance reviews of Physics Today news writers, for example, do not contain lists of the countless news stories that they could have written but didn't.

The review lists three articles that I edited (Perl, Crabtree/Nelson, Mourou) and claims that the quality of my work varied. In fact, because of my own standards I do a quality job on everything I do. There is, of course, no objective measure of the quality of editorial work. Articles are inherently different and hold a different appeal to different readers. In my performance review the editor implies that praise from authors is one measure, but he fails to note that we received praise from the authors of all three articles. Martin Perl, winner of the 1995 Nobel Prize in Physics, wrote to me and said "Thank you for changing my ugly duckling of a manuscript into a beautiful swan. You have done a wonderful job." I have attached a copy of his note along with a note from George Crabtree of Argonne National Laboratory praising our efficiency, competence and high production standards; Mourou delivered his praise in a telephone call.

It is true that the changes that Benka mentions making in the Mourou article were improvements that other staff members or the author might not have made at one of the later stages in the processing of the article. However, it is wrong to use this as the sole factor in judging the quality of work on the entire article, which would have been excellent even without Benka's improvements. And it is even more wrong to use it to judge an employee's entire year of work. Stephen Benka knows this. He knows, for example, that AIP management will not judge all of his excellent work on the Mourou article solely by the fact that he tried to introduce a mistake in the article's opening paragraph -- where he crossed out "30 angstroms" and wrote in "300 nm" and had to be corrected by the Article Editor. And he knows that his supervisors certainly will not judge his entire year of work in part by this mistake. He would see mentioning it on his annual performance review as petty, mean-spirited and sure to make team work impossible because it would give the impression that no error is too small for

the people that he works with to silently note and use against him months later. Please remove from my performance review the entire subjective sentence about the three articles.

Solicitation follow-up

Concerning my solicitation follow-up work, the performance review understates the quality of my work and rates me only slightly above average. The only activity mentioned is that I "regularly nudged authors and reviewers whose items were pending." This is actually the smallest part of solicitation follow-up work. The biggest part, at least for the articles that I work on, is giving detailed feedback to the author and working with the author to develop a much better article. I often go way beyond the call of duty, taking extra time to work closely with authors to improve the final result. I am prepared to supply written evidence showing that my work in this area is exemplary. Please change the review so that it more accurately portrays my work in this area, and raise the numerical rating from the present stingy "3.5."

Advice

Concerning the advice that I offer on editorial and other matters, my supervisors have suddenly (that is, within this review period) started looking for ways to prove that the advice I offer is bad. Coming up empty-handed, they have contrived two examples, one of which is a new, negative interpretation of advice I gave in an earlier review period. My 1998 performance review says, "Jeff's reviews of manuscripts have been completed more promptly than in the past, although they were somewhat less helpful." It is simply not true that my advice was less helpful this year. My comments on manuscripts often went beyond the minimum requirements and spelled out in detail what should be done to produce a publishable article.

As evidence that my advice is less helpful, the performance review gives only the following example, which is presumably my most deficient piece of work in this area for the entire year: "In his review of one Letter to the Editor, for example, he showed questionable judgement in his assessment of the physics competence of the authors of the Hubble Deep Field article (April '97)." There is absolutely no truth to this charge; its only value is that it reveals the bias of those who made it. I demand that my work on this letter be evaluated by an unbiased individual. James Stith, I would like you to be that individual, not because it is your job to handle appeals from Physics Today, but because your long-standing interest and expertise in physics education qualifies you to evaluate my work on this letter. All work on the letter was done in writing, and so you have a 100% complete record to review (attached). I challenge

you to find anything in my work on the letter for which I should be punished.

Here is a five-step summary of the facts of the case:

1. I edited an article by Henry Ferguson and two coauthors for the April 1997 issue of Physics Today.

2. Robert Weinstock, an emeritus professor of physics at Oberlin College, submitted a letter to the editor saying that he didn't understand how astronomers could look back more than half the age of the universe, as a photo caption in the article said. "This claim seems strange to me," wrote Weinstock, "for radiation emitted so long ago must have had its source so close to Earth at the moment of emission -- according to the generally assumed big-bang origin of the currently expanding universe -- that it would have reached Earth [long ago]." He ended his letter by saying that "If there is something wrong with my analysis, I shall be grateful to have it explained to me."

3. I thought Weinstock asked an intriguing question and that many of our readers would also be grateful for an explanation (and would value a magazine that gave them such explanations). Here, in its entirety, is my review of the letter: "I think a lot of our readers would appreciate an answer to the question that Weinstock raises. I suggest that we publish a shortened letter (see enclosed edited version) along with an answer from Ferguson." (The parenthetical words were part of my review.)

4. To my disappointment, the response from Ferguson and his coauthors was based completely on equations, with no explanation of what was going on. I wanted a physical explanation, not a mathematical one. So I recommended that we ask Ferguson & Co. for something very simple. Of course, as good science writers and teachers know, an explanation that is simple and without equations is sometimes much more difficult to produce. Sometimes when scientists don't have a Feynman-style intuitive understanding of a particular issue, they take refuge in equations. That is, sometimes authors don't understand the physics of every item that they report in their articles. I have encountered this countless times over the years while questioning authors so that I could clarify something in their articles. Sometimes they say: I don't know, my coauthor wrote that part of the article. Or they say: I don't know, I got that from So and So's paper in such and such journal. So in my review of Ferguson's letter I warned that this was one possible reason why we got only equations. I figured that if we were aware of this possibility, then we wouldn't go back to the authors again and again in a futile effort to get something that they were not prepared to supply. Here, in its entirety, is my review of Ferguson's letter: "Weinstock's question should get a physical explanation as an answer, not a

mathematical one like this. I say drop the mathematical one, don't just add the physical one to it. Perhaps ask Ferguson & Co. to write what they would say to a high-school student (or radio audience) who noticed this seeming contradiction. One possible reason that Fergie & Co. answered as they did is that they don't really understand the physics."

5. Benka rejected my suggestion that we ask Ferguson for a simple answer, and, ironically, punished me seven months later for not being fully confident that Ferguson could have provided such an answer. Because my advice was rejected, Physics Today readers ended up seeing no question from Weinstock and no answer from Ferguson.

You can see clearly now that while my performance review says, "he showed questionable judgement in his assessment of the physics competence of the authors," I in fact never made any assessment of the physics competence of the authors, positive or negative. Even if I had made such an assessment, the Physics Today managers did not and cannot accurately claim that the advice it led me to give was anything less than excellent. Their relentless search to find fault with my work, and their twisted and biased evaluations of my work when it contains no real fault, raise serious questions about their professionalism as managers and certainly disqualify them from judging my performance. If you judge that I did good work on the letter, as I claim, then I ask that my performance review mention that work as an example of my routine interest in serving the magazine's readers, and that the numerical rating on my review be raised to reflect the new, unbiased assessment. I ask AIP to make these adjustments not just to make my performance review more accurate, but more importantly as an urgently needed announcement that AIP will no longer use performance reviews to punish employees who raise troubling workplace issues.

As with every other part of my performance review, Benka refused to make any changes in this part of the review when I pointed out its inaccuracy. I asked him if he had any other examples of my supposedly bad judgment. All he could think of was something from an earlier review period: my suggestion that Physics Today try to get G. Pascal Zachary to write an article about Vannevar Bush. Zachary is a journalist -- one of the best in the country, I think -- as well as a history of science scholar. I had learned that he was writing the first ever biography of Bush, who was the first presidential science advisor and an individual who played a key role in shaping the federal science policy that prevailed for decades after World War II. After I proposed this article at a staff meeting, Physics Today publisher Charles Harris spoke about it with AIP history division postdoc Joel Genuth, a friend of Harris's at the time. I spoke with Genuth, too. Genuth advised against the article,

because Zachary was not a mainstream thinker -- quickly adding that he (Genuth) was "no slouch" and could write the article for Physics Today. At a subsequent staff meeting, I reported positive evaluations of my proposal from more established science historians and argued that our readers could handle Zachary's point of view. But Harris stuck with Genuth's review, and so that was the end of my proposal.

Now, more than a year later, during the discussion of my 1998 annual review, Benka has put a new, totally negative spin on my work on the Zachary proposal. To my surprise, when he mentioned my judgment in the Zachary case, Benka showed no sign of embarrassment, apparently completely unaware that Zachary's book was recently published to widespread praise and attention. The vast majority of books are not reviewed anywhere, but Zachary's Endless Frontier: Vannevar Bush, Engineer of the American Century (The Free Press, 1997) was both widely and positively reviewed by well-respected experts writing in major publications. (Please read the attached reviews.) Apparently, the official Physics Today line now is that Zachary managed to hoodwink major American publications and experts -- but not Physics Today. Again, because my advice was not followed, Physics Today readers missed out on what surely would have been an interesting article. Yet I am the one whose judgment is being questioned -- for reasons that I will explain below.

I ask that my performance review be corrected so that my judgment, and its value to the magazine, is discussed positively rather than negatively. I would like my work on the Zachary proposal to be mentioned as an example of the fact that I offer ideas of merit even though I am not expected to be a major source of article or story ideas. I ask that the numerical rating be raised to reflect the new positive evaluation, and that the rating be above average to reflect the fact that I offer more than the required advice. I request that AIP make this change not just to make my performance review more honest, but more importantly as an implied announcement that AIP will no longer prejudice performance reviews against employees who raise awkward workplace issues.

Additional comments

In the handbook that is given to all employees, the American Institute of Physics promises that the annual performance review will feature a discussion of "mutual goals." (Employee Handbook, page 18.) Without explanation, this year Benka followed neither the letter nor the spirit of this policy, and didn't even pretend to be interested in what direction I might want to go in my work at AIP. The discussion was unlike anything I have experienced in previous years. He simply announced a big change in my job description -- an increase in my workload by as much as

16

true

three months' worth of work per year -- and discussed it as if he were giving orders to a machine. Over the years my job description has changed many times (the most recent change being on 25 August 1997), but never by unilateral management dictate, without discussion and mutual agreement. For reasons that I will explain below, I think this change, and its unilateral imposition in violation of American Institute of Physics policy and usual practice, is punitive.

The written review accurately calls the change "new demands." But it inaccurately implies that other Physics Today staff members are meeting such new demands. My coworkers have experienced no such major increases in their workloads either voluntarily or by management order (except in one or two cases in which individuals have voluntarily renegotiated their job descriptions, job titles and salaries). My coworkers and I work hard and cannot reasonably be expected to take on additional work. Among my coworkers who have not stepped up their workloads are Gloria Lubkin, Barbara Levi, Bert Schwarzschild, Charles Day, Irwin Goodwin, Carol Lucas, Toni Feder, Jean Kumagai and Warren Kornberg.

The 25 August 1997 agreed-upon change in my job description reduced my article editing work to 70% of my time (14 articles per year) so that I could increase my work in other areas, which I have done. Now, just a few months later, AIP is using my performance review to arbitrarily increase my annual article editing load to 18 -- a 28 percent jump. The performance review also changes my job description to add a significant load of clerical work (keyboarding) to my job for the first time in my 17 years at the magazine. Other editors who work better on paper (for example, the book review editor and the copy editor) are not being told to change the way they work or to take on the associated clerical work. This clerical work, which includes keyboarding the dozens of changes made by the copy editor, could take as much as a few days per month, depending upon the article. It would lower the overall efficiency of work at the magazine, because the time spent on clerical work would, of course, reduce the time available to do other work such as article editing and article solicitation; instead of paying $15/hour for clerical work, AIP would pay $30/hour. Like many people, I do better work on paper than on a computer screen (and a long-standing back problem precludes long sessions sitting in front of the screen anyway). I ask that support staff be made available once again. Even if management had a valid reason for adding clerical work to my job, that reason cannot be a new one. What is new is that, for reasons discussed below, management has suddenly gotten "on my case" and is taking a hard-line on every issue.

In Benka's pro forma discussion with me about my performance review, he never asked about the direction in

which I would like to go on the job. If I were able to take on additional work, I would like that additional work to be somewhat different from what I am doing now, to provide some variety and to contribute to the magazine in a different way. When I explained this to Benka, he acted uninterested and reasserted his uninspiring, unilaterally developed plan for me, which is to do the same work, only a lot more of it.

Reprisal and repression

The American Institute of Physics is making a strong effort to prevent Physics Today staff members from pursuing workplace grievances in an organized way. Problems are to be discussed with managers on an individual basis only, we have been told. (Message transmitted to staff through warnings to Graham Collins and in other ways.)

Physics Today staff members have many legitimate concerns. Many believe, for example, that the company fails to provide conditions of employment appropriate for professionals. According to my philosophy, if there is a problem, then everyone who is in a position to address it has a moral obligation to do so. Thus, problems at the magazine are everyone's business -- the business at least of everyone who works there. Even though management doesn't see it that way, I have always tried to do whatever I could to help solve problems that arise, whether or not they affect me directly. You, too, are in a position to do something about the problems at the magazine, and therefore I think you have an obligation to do so, for the sake of both the magazine's staff and the physics community.

out of context disruptive, counterproductive chaos

During the discussion of my performance review, Physics Today editor Stephen Benka condemned my organizing activities at the magazine and said bluntly that such activity "is not going to be tolerated anymore." He characterized the staff actions in which I have played a leading role as nothing more than "disruptive," rejecting my view that the source of the problem is management's failure to address staff grievances. A workplace in which unity is discouraged, as it is now at the magazine, is disruptive. The low morale, the inability to confront problems, the loss of talented and dedicated staff due to a love-it-or-leave-it atmosphere -- these consequences of management policy are disruptive and wasteful.

18

Physics Today publisher Charles Harris has made it clear to me and to many staff members (names withheld) that our activities have infuriated him. And American Institute of Physics Executive Director/CEO Marc Brodsky has characterized some of my activities, presumably reported to him by Harris, as "counterproductive" (20 March 1998). It is clear that Benka's hard-line attitude toward me is an attempt to redress Harris's and Brodsky's grievances with

19

I don't know anything about this.

the staff -- in particular, with those staff members whom Harris has identified as ringleaders. (Harris's ringleader theory insults the staff, because it implies that staff grievances arise not because of real problems in the workplace, but because an evil few have corrupted the minds of happy but gullible staff members and led them astray like children.)

In this memo I will be open about my organizing activities at Physics Today, because the problems at the magazine call for an organized response and because the physics community strongly supports physicists' right to organize without fear of reprisal. The latter point is evidenced, for example, in the community's many years of support for Soviet physicists who were punished for organizing, and in its concern today for physicists in other countries who face similar repression. In any case, freedom to address workplace problems is a necessary component of a truly democratic society.

Management is attempting in two ways to prevent the Physics Today staff from pursuing collective grievances -- by punishing those who speak out the most and by maintaining an increasingly repressive workplace atmosphere. My lower performance rating and subjection to an arbitrarily revised job description that makes "new demands" are punishments for taking up staff grievances. What follows is a discussion of a few of the collective staff activities in which I played a leading role and for which management criticizes me. Included is a discussion of some of the repressive measures that management has taken in response to those activities. The discussion should make it clear that my review is only one part of a series of recent attempts to stop me from promoting or engaging in any concerted staff activity.

1996 retreat

During the discussion of my performance review, Benka criticized me for my activities around the 19-20 November 1996 Physics Today retreat. Before that two-day meeting, I and some coworkers (names withheld) developed and distributed to the entire staff a list of changes that we wanted made at the workplace. We presented these requests in the form of a proposed agenda for the retreat. Fearing reprisals for making requests that might not please management, we did not disclose our names. However, the fact that I played a leading role was known to all. Job security was our highest priority, and so our demand for that topped our list. (See item 1 in attached document of 15 November 1996.) Other requests included staff involvement in workplace dispute resolution (item 4), better distribution of job tasks (item 5), affirmative action in hiring (item 8), and conditions of employment appropriate for professionals (the other items).

I told the staff this was a "no brainer" and took immediate and continuing AA steps.

19
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Salary equity

I worked with other staff members to demand pay equity at Physics Today. On behalf of those of us who were pushing for this, I told the Physics Today advisory committee at their 4 October 1996 meeting that the large salary differentials among the staff were not only unfair, but also divisive and bad for morale and productivity. I raised the issue at various staff meetings as well. Management was not pleased by the pressure we applied, in part because it forced them to give a staff member (name withheld) a special 25% salary increase, beginning on 1 June 1997.

Affirmative action

Management's anger at me increased dramatically, and never subsided, when I worked with Jean Kumagai and other staff members (names withheld) to assert the need for equal opportunity and affirmative action in hiring at Physics Today. We raised the issue when Ray Ladbury left the magazine, creating an opening on the editorial staff. (His replacement, Charles Day, started work on 2 June 1997.) I spoke out strongly on the equal opportunity and affirmative action issue, because Jean and I and the others didn't think Physics Today or AIP management took it seriously. Our concerns were largely ignored, and so, later in the year, we decided to bring the problem to the attention of the Physics Today advisory committee at its annual meeting, held 17 October 1997. On behalf of the concerned staff members (names withheld), I brought the matter to the committee's attention.

One week later, on 24 October 1997, American Institute of Physics Executive Director/CEO Marc Brodsky called me and said that I had made "a very, very serious charge." (Detailed notes available.) He directed me to meet with him and defend my charge, and I did so on 5 November 1997. At that meeting I gave Brodsky a note summarizing the important points. Rather than repeat those points here, I am attaching a copy of the note. (See note of 5 November 1997.) That note is an important part of this appeal about my performance review, and so I ask that you read it.

At my meeting with Brodsky I also pointed out that AIP had failed to conduct the affirmative action training that it promised to conduct in its 284-page "1996 Affirmative Action Program for American Institute of Physics." (See attached excerpts.) Among the many promises that AIP makes in that 1996 document is that "During the current plan year we will be conducting training for all employees about our affirmative action program and equal employment opportunity in the workplace." I pointed out to Brodsky that AIP did not conduct the promised training. He countered by saying that he was pretty sure that he mentioned affirmative action either at the one-hour question-and-answer session that he

held on 20 June 1996 or at the Q&A meeting that he conducted for employees at AIP's facility in Woodbury, New York. (I recall no such mention at the 20 June 1996 College Park meeting.) He indicated that this mention was the promised affirmative action "training."

Brodsky said he would look into affirmative action at Physics Today and tell me what he found. After a 4.5-month investigation, he met with me on 20 March 1998 and reported that he found that Physics Today's affirmative action program was doing very well. He said he judges the program by its results. (This was mysterious, because as of 20 March 1998, the Physics Today staff in the College Park office was all white; out of a staff of 18, the magazine had only one minority employee, working from New York.) I asked again about the promised affirmative action training. This time he said he was sure that he had mentioned affirmative action at both 1996 Q&A meetings, and he again indicated that such mention was the promised affirmative action training. After extensive questioning, he said that such mention was "part of" the promised training. I asked him when the rest of the training would be done, and he promised to look into that. In the end, I told Brodsky that we still believe our concerns to be well founded and that we are disappointed with his response. Apparently in Brodsky's view, however, the upshot of what happened is that I leveled serious, totally unfounded charges at AIP, and he is not happy about that.

1997 retreat

Management's anger at me increased yet again (and has not decreased since) when I helped raise staff concerns before and during the 25 September 1997 one-day Physics Today retreat. Before that meeting, I played a leading role in producing a list of proposed agenda items that represented a few of the many staff concerns. A majority of the staff supported it, and half of the staff signed it. (See attached e-mail message of 18 September 1997.) The top item on that list was a request for greater staff participation in decision making. The days leading up to the meeting saw much debate between management and many staff members over the meeting agenda, which management was formulating. Harris became upset that the staff wasn't embracing his agenda, and he began treating me and my coworker Graham Collins as ringleaders on the staff side, apparently becoming permanently angry at us.

At the retreat itself I asked if staff members could ask questions. Harris said no. I then said that I thought that we <u>should</u> be allowed to ask questions. Harris angrily said "No, That's an order!" Some days after the meeting he explained that he thought my request for the right to ask questions was another attempt to promote the staff agenda. At the retreat and in subsequent weeks, a number of brave

coworkers openly criticized Harris for the way in which he shut me up.

Gag order

After the retreat Harris put a gag order on me, handing me a written "notice" that implied that I would be fired the next time I said anything that Harris considered to be "counterproductive." (Document dated 26 September 1997 withheld.) This outraged many of my coworkers, who saw my forced silence as against their interest. They openly criticized the gag order, forcing Harris to rescind it. (Electronic mail message of 2 December 1997 withheld.) He did so reluctantly and without any decrease in his anger toward me.

Appeal to advisory committee

The gag order was just one of many management actions that strongly discouraged staff members from raising grievances of any sort. In an effort to get this chill lifted, a number of staff members (names withheld) decided to appeal to the Physics Today advisory committee at its annual meeting on 17 October 1997. We made our appeal to the committee, which reports to AIP's top management, in writing (memo of 17 October 1997 withheld) and in individual oral presentations. Our written note was titled, "Freer Atmosphere Needed at Physics Today" and began, "At Physics Today there is an increasingly repressive atmosphere that discourages staff initiatives...." The memo described how Physics Today staff member Graham Collins had also been warned about speaking up about workplace problems. It contained the following paragraph: "Both Jeff and Graham have been outspoken about problems that many of us see at the magazine. We feel that the lecture to Graham and the written notice to Jeff both contribute to a repressive atmosphere at the magazine and restrict all of us. We hope the advisory committee will do whatever it can to get these warnings retracted, and to remind the PT managers that repression is counterproductive. Such steps would go a long way toward diminishing the fear that staff members now associate with trying to openly address problems at the magazine."

Harris has harshly criticized me for my leading role in the presentations to the advisory committee, telling me and others (names withheld) incorrectly that I tried to get him fired. He sees this as an unforgivable offense that obligates him as a matter of manly honor to fire me or eventually drive me out and that gives him the moral right to do so by any means. Those means include steps that appear honest to outsiders but are not -- such as the present performance review, which imposes an unattainable goal that can be used against me a year from now when it has

not been met. When I explained to Harris that neither I nor the other staff members involved tried to get him fired or even wanted that to happen, he replied that I was either naive or lying. (I still do not want him fired, but I can no longer speak for others on this point. Respect and support for Harris by other staff members, including some not involved in our collective activities, have deteriorated sharply.)

Ban on my private conversations

In pursuit of his agenda, Harris has evidently given Benka license to go after me and other perceived management enemies on the staff. I will briefly describe here a recent example. (A more detailed account is available.) At about 6 pm on Wednesday 28 January 1998, I was in my office talking to my coworker Toni Feder on the telephone when Benka opened the door and asked rudely and sarcastically if I was talking to one of our authors. I said, "No, I'm talking to a coworker, Toni." He acted as if he already knew that. He stepped further into my office and said that he wanted in on our conversation. This was unprecedented and frightful. I switched Toni to the speakerphone and told her that Stephen Benka was here and wanted to be in on our conversation. She sounded equally shocked. Benka suggested that she walk over from her office to mine, and she said OK. I then walked out of my office and into the open area of desks just outside, and Benka followed. I did this to make room for Toni and to get some physical distance between myself and my supervisor, who was clearly behaving very strangely.

After Toni arrived, Benka asked us what we had been talking about on the telephone. I thought his question was way out of line, but I answered it anyway: We had been discussing the May 1998 50th anniversary issue of Physics Today. But after giving that short answer, I said that the important question is why he was trying to barge in on our conversation.

made no such statement 20 21

He answered by announcing that Physics Today management is forbidding all private conversations between staff members at work. From now on, all conversations between staff members must be open to management supervision, he said. When I asked him why, he referred to the organizing activity that took place last year and said that he doesn't want that to happen again. This smelled like a retaliatory and repressive policy aimed primarily at me, and so I asked him whether or not it applies to everyone. He said it does. I didn't believe him (but I didn't say that I didn't believe him), and so I pressed him three or four times to say whether or not he was going to announce the new policy to the rest of the staff. His final statement was that he knows that I want to know that.

The policy was never formally imposed on the rest of the staff, of course. But news of management's anger at private conversations spread quickly throughout the staff (yes, by way of private conversations). Even though the totalitarian policy officially applies only to me and Toni, it has put a chill on everyone's expression and has contributed to the repressive atmosphere at Physics Today.

Physics Today loses Graham Collins

In this memo I have for obvious reasons focused on my own case. But I don't want to leave the impression that management is critical only of me. In fact, they target any employee who speaks out about workplace problems. My most outspoken coworker, Graham Collins, was also the subject of a gag order and other reprimands for saying what many on the staff were thinking but were afraid to say. (Graham's gag order and mine were lifted at the same time.) I won't explain here how management irresponsibly made leaving the magazine Graham's best option. The details are available elsewhere. But with permission from Graham and all involved, I am attaching a copy of a note to Graham that I helped write after he submitted his resignation. (See attached note of 16 March 1998; authors' names withheld.) Please read the note as an integral part of my performance review appeal, as it contains a number of important and relevant points not made elsewhere.

'On my case'

As I mentioned above, management is now "on my case," and so my work is now subjected to greater scrutiny. Without precedent, the magazine's management recently examined and criticized some of my work before I completed it. (That was my work on the first of the five decade sections for the May 1998 50th anniversary issue of Physics Today.) Ever since the 1997 retreat, Physics Today publisher Charles Harris has given me the impression that I am being monitored. After the retreat he attended almost every magazine department meeting that I attended -- meetings that he had only rarely attended in the past. After some meetings, he commented privately to others about my performance.

Your moral responsibility

Physics Today's new love-it-or-leave-it policy, mentioned in the 16 March 1998 note to Graham, implies that the magazine's problems originate in the staff. Keeping the focus on the staff is not simply a harmless way that management diverts attention from itself, but is extremely costly. In the short time since Graham submitted his resignation, editor Benka's assistant Susan Funk has quit in frustration, and publisher Harris's assistant Carol Lucas has resigned. The loss of experienced staff, the

discouraged state of many of those who remain, the repressive atmosphere's toll on creativity -- in general, the frustration of those who want their job to be more than a simple exchange of time for money -- in these and other ways current policy wastes the resources of the physics community. You have a responsibility to undo the current widespread cynicism at Physics Today by making staff-initiated change possible.

5/1/98 4pm Jeff called me to let me know that DeKee was running late for several reasons that were "out of his control."

1.) He had subcontracted the keyboarding to Monica Oliver on Monday, and didn't find out until Friday that it had been "taken away" from her. (I told him I'd "heard about that.")

2.) For some mysterious reason, his subsequent keyboarding could be called up on the screen but not changed further. He had to redo it all.

3.) Ventura wouldn't load it - Elliot finally figured that one out.

Jeff got the article to Paul on Wed (4/29) and Paul will try to have it in less than his usual 5 working days, perhaps on Monday, but maybe Wed.

Then Jeff has to enter Paul's changes, give it to me and send it back to the author. I told him I would do what I could to expedite it.

I was disappointed that it was taking him so long, and thanked him for keeping me informed of the delay.

D00461

- JB

19___	Education	Employment	Political, Social	International	Changes in Physics Today	Ed. Init.
MONTH						

D00462

5/4/98 I went over the next few months' articles' status with Jeff. They all are in good shape, except for Dekel (June), which is not yet copy-edited.

His reasons (in addition to those he mentioned in his phone call to me last week) are mainly that what I thought was "ready to edit" he thought was not. He needed a number of clarifications from the authors before he could begin editing. (5/1/98)

I did say that the Dekel article had been floating around for several months and should not be running late. He agreed, and attributed it all to the 3 previously mentioned reasons. I mentioned that the decision to "subcontract" to Monica had certainly been under his control.

19__	Education	Employment	Political, Social	International	Changes in Physics Today	Ed. Init.
MONTH						

D00464

5/5/98 I just learned from Barbara that Jeff sent her a copy of his lengthy response to his performance review, even though she told him she didn't want it and didn't want to be involved. Presumably he sent a copy to each staff member (except Charles, Gloria, and me).

19___	Education	Employment	Political, Social	International	Changes in Physics Today	Ed. Init.
MONTH						

D00466

First pages
5 May 98
SB 5/5/98

POLYMER RHEOLOGY

Neither purely viscous nor perfectly elastic, polymeric fluids have a fading memory of their undeformed shape and display spectacular phenomena not seen in Newtonian fluids.

Daniel De Kee and Kurt F. Wissbrun

Polymers, foods, cosmetics, paints, pharmaceuticals—these are just a few of the many industries in which rheology research finds application. Rheology addresses the relationship between the stress on materials and the resulting deformation, and is therefore a part of continuum mechanics. Two laws dating back to the 17th century are very important in rheology. Hooke's law describes the behavior of an elastic solid, relating the stress to the deformation via a constant elastic modulus. And Newton's law describes the behavior of a linear viscous fluid, relating the shear stress to the rate of deformation via a constant viscosity coefficient. The aim of rheology today is to describe the more complex behavior of most real materials when they are examined over a wide range of stresses and deformations.

Historically, the pioneers of the field were interested in such problems as the non-Newtonian viscosity of paints and the time-dependent deformation of concrete beams under load. The greatest advances in understanding occurred, however, with the advent, starting in the 1930s, of technologies based on synthetic high-molecular-weight polymers. These materials display a wide variety of readily observed unusual rheological phenomena, which are of great importance to the synthesis, processing and end-use characteristics of the materials. As a result, probably a majority of rheological research in the past five decades has been devoted to the study of polymeric materials.

In recent years, many of the experimental techniques and theoretical and numerical approaches developed in the study of polymers have been adapted for application to many other materials—granular materials, colloidal and coarse suspensions, foams, micellar solutions and inhomogeneous solids, to name just a few. In this article, we limit ourselves to a few areas of polymer fluid rheology that are relatively new or that, even though studied for a long time, still present unresolved problems.

In all fluid mechanics problems, it is necessary to solve the momentum and energy conservation equations subject to boundary conditions that define the geometry of the problem and subject to a mathematical description of the fluid. That description is called a constitutive equation, a rheological equation of state that relates the time-dependent stresses and strains.

Most polymers (familiar as plastics, synthetic fibers and elastomers) have linear molecular backbones, with their flexibility attributable to rotation about the backbone bonds. Under the influence of Brownian motion, they assume the shape of a coil, which can be described as the result of a three-dimensional random walk. Distortion of the coil results in a stress that tends to restore the undeformed shape. This property is the basis for the classical entropic theory of rubber elasticity. The volume pervaded by a coil is much larger than the molecular volume; in other words, the density of a coil is much smaller than the measured macroscopic density. Therefore, in concentrated solutions or in melts of high-molecular-weight polymers, many coils from different molecules overlap in a given volume element, resulting in strong intermolecular interactions, which have often been called entanglements. These entanglements are supposed to play a role similar to that of the chemical crosslinks in rubber elasticity theory, but they are not fixed and can respond to external stresses and to Brownian motion.

As a result the behavior of polymeric fluids falls somewhere between that of a purely viscous material and that of a perfectly elastic material. A volume element of an elastic material has a perfect memory of its undeformed shape; that of a viscous fluid has no memory at all. Polymer solutions and melts are viscoelastic; a volume element of such a material has a partial memory that fades with time after a deformation is imposed. The viscoelastic character of polymeric materials is responsible for a number of spectacular phenomena not observed with Newtonian fluids, as discussed in the box on page [illegible] and in figures 1–3. Excellent presentations of non-Newtonian rheological phenomena can be found in references 1–3.

The examples in the box draw attention to the striking differences between the behaviors of Newtonian and non-Newtonian materials. Several other examples are described in references 1–3, and no doubt a variety of flow phenomena involving viscoelastic liquids still remain to be discovered and explained.

Here we briefly describe a few topics of interest to the rheological community involved with polymers. They include the development of appropriate equations of state, instabilities in melt flows and the very complex behavior of liquid crystals.

Constitutive equations

To solve flow problems, one must introduce an equation of state that relates the stress tensor to various kinematic tensors. The development of appropriate constitutive equations to describe the stress state of viscoelastic liquids is an area of active research and controversy. No theory is yet available that adequately describes all of the observed phenomena in a variety of flows.[4]

Constitutive equations have been developed based on continuum mechanics or on the molecular structure of the fluids. In the continuum approach, no explicit consideration is given to the molecular structure of the material,

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D00467

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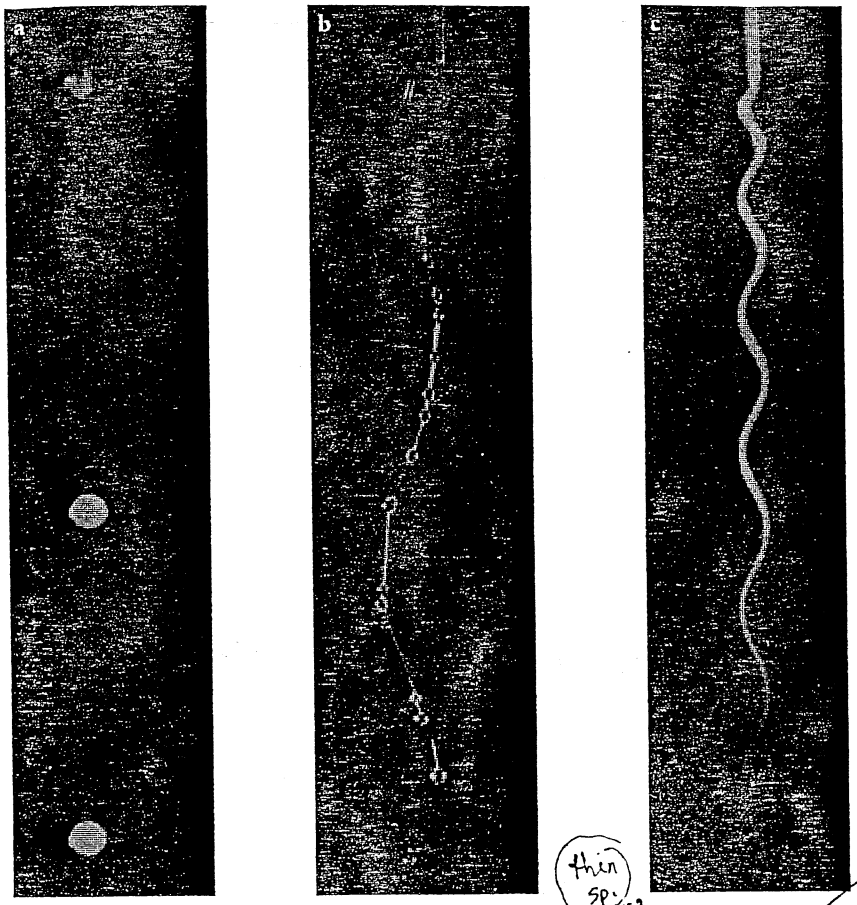

FIGURE 1: LIQUID EMERGING from a vibrating nozzle. a: Newtonian fluid. b: Dilute polymer solution. c: Concentrated polymer solution. (From C. F. Chan Man Fong, D. De Kee, C. Gryte, J. Non-Newt. Fluid Mech. 46, 111, 1993.)

and an appropriate relationship between suitable dynamic and kinematic variables is postulated.

In the molecular approach, the molecular structure of the fluid is taken into consideration. In modeling polymeric materials, one first represents the polymer molecules by mechanical models. One then introduces a probability distribution of the molecules. Finally, one calculates the average of all quantities so that a relationship between macroscopic quantities of interest can be obtained. Three models have been studied extensively by rheologists: the bead-rod-spring model, the reptation model and the transient network model.

The bead-rod-spring model has been proposed to describe dilute polymer solutions. The polymer molecules are idealized as dumbbells, consisting of two beads joined by a spring. Hydrodynamic, Brownian and intramolecular forces act on the beads. The polymer solution is modeled as these dumbbells suspended in a Newtonian fluid of constant viscosity. In the absence of external forces, neglecting inertia terms and considering the flow to be homogeneous, one can obtain a constitutive equation for a dilute polymer solution. More realistic models portray macromolecular chains as consisting of N beads connected by $N-1$ springs. Further improvements involve the consideration of non-Hookean springs and the inclusion of hydrodynamic interaction.

In concentrated solutions and in polymer melts, the motion of a chain is constrained by other chains, and this is taken into account in both the reptation model and in the network model.

In the reptation theory, the constraint that polymer chains cannot pass through each other is interpreted such that each chain is confined to move inside an imaginary tube.[5,6] A constitutive equation based on this concept can be written as

$$\sigma = \int_{-\infty}^{t} [M_1(t-t', I_1(t,t'), I_2(t,t'))\, \mathbf{C}_t^{-1} + M_2(t-t', I_1, I_2)(\mathbf{C}_t)^2]\, dt,$$

where σ is the extra stress tensor and I_1 and I_2 are invariants of the Finger deformation tensor $\mathbf{C}_t^{-1}$. The memory functions M_1 and M_2 can be written as products of functions of the past time $(t-t')$ and of deformation only. This equation is known in continuum mechanics as the Kaye–BKZ equation.

The transient network model is an adaptation of network theories of rubber elasticity.[7] In the case of polymer melts and concentrated polymer solutions, the network junctions are temporary, rather than permanent as in a chemically cross-linked rubber. That is, they can be destroyed and new junctions can be formed. The loss and creation of segments are analogous to the loss and creation of tubes in the reptation model.

The transient network model can describe many of the phenomena associated with linear (small deformation) viscoelasticity. It does not predict shear thinning of viscosity as observed in viscometric flows of polymeric fluids. One way of overcoming this shortcoming is to allow for the rates of creation and loss of segments to be functions of a macroscopic variable such as an invariant of the shear rate.

Such shear-rate-dependent models can satisfactorily predict the rheological properties of polymeric systems.[8] They have been objected to on the ground that they do not recover the linear viscoelastic behavior in small-amplitude oscillatory flow. This objection can be refuted by noting that, in the case of small strains, the creation and

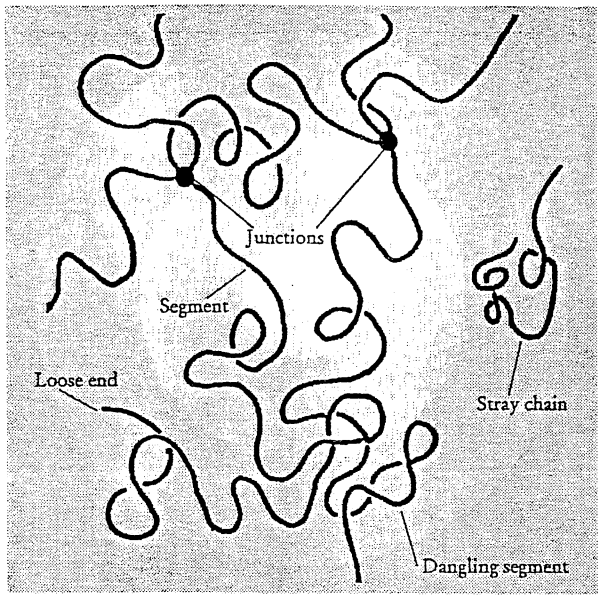

FIGURE 2: POLYMER NETWORK. The part of a molecule that joins two successive junctions is an active segment. A chain that is connected to only one junction is a dangling segment. A chain that is not attached to the network is a stray chain

loss of junctions are due to Brownian motion and are independent of the imposed flow, and so the model reduces to linear viscoelasticity in small-amplitude oscillatory flows. It also has been suggested that the stress generated is strain-rate dependent and not strain dependent.[3,9,10] At present, the model parameters of the network theory are not related to the molecular structure of the material, and future research should focus on seeking such a connection. Other successful models[11] have assumed the rates of loss and formation of junctions to be functions of the invariants of the stress tensor, and some researchers have proposed a strain-dependent model.[12] Such a model assumes the rates of creation to be constants and the rates of loss to depend on the trace of $\mathbf{C}_0$ as well as on the trace of $\mathbf{C}_t^{-1}$, resulting in a model that can be considered to be a special case of the reptation model or of the Kaye–BKZ model.

Recent developments in the network theory deal with predictions of "stress jump" and shear thickening. Stress jump is defined as the instantaneous finite change in the stress due to a sudden finite change in the rate of deformation. Not all constitutive equations can predict a stress jump; it requires the introduction of a singularity in the memory function. In essence the memory function is represented in two parts. One is associated with a response due to the active network segments. The other accounts for the contributions of the solvent molecules, stray chains and dangling segments. The cause of shear thickening is the flow-induced complex arrangement of the material due to effects such as electrostatic interaction, hydrogen bonding and the trapping of dangling segments and stray chains by the active network. These effects lead to an increase in the number of junctions and hence an increase in viscosity.

Other recent developments include

▷ The introduction of the slip-link model. Slip-links are small rings through which the chain can pass freely. This idea can be combined with a network model so that one can consider a network of active Gaussian segments between slip-links.[13] Due to the possibility of slip, the number of monomers between two junctions can vary upon deformation and may lead to disentanglement. The constitutive equation now involves a slip function, as well as a disentanglement function.

▷ The introduction of constitutive equations based on structural kinetics—that is, based on a set of equations describing the degree of structural nonequilibrium.[3]

▷ The introduction of the double reptation model, where the reptation of a stress point (a junction) is considered in addition to the reptation inside the tube.[14] A combination of the reptation and network models may shed light on the process of loss and creation of junctions and on the deformation of segments.

Instabilities in melt flows

It has been known for more than 50 years that when molten polymers are extruded at a sufficiently high rate of flow, the extrudate becomes distorted and no longer has a cross-sectional shape resembling that of the die. Studies have identified a wide range of types of distortion, some of which are illustrated in figure 4. For historical reasons, the occurrence of these distortions is generally, but confusingly, referred to as melt fracture.

Two of these manifestations of instability have been studied in great detail by many investigators. One is the formation of surface roughness, which leads to a lack of gloss and clarity of the extruded film. The other is an

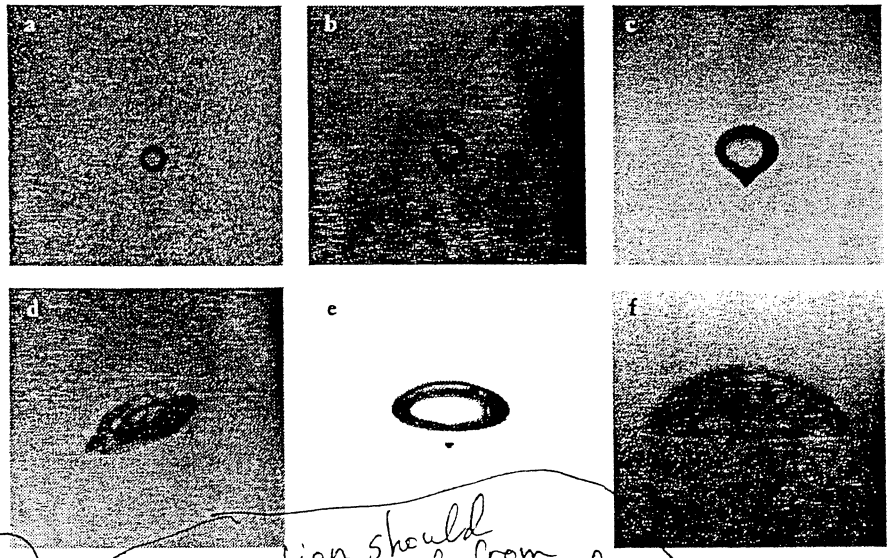

FIGURE 3: SHAPES OF BUBBLES in a 1% by mass polyacrylamide solution (prepared in a 50% mixture of glycerine and water) (a, b, c, e and f) and in a Newtonian 40% aqueous glycerine solution (d). Bubble volumes a–f are 0.01 ml, 0.1 ml, 1 ml, 1 ml, 2 ml and 10 ml, respectively. Smaller bubbles are shown at greater magnification.

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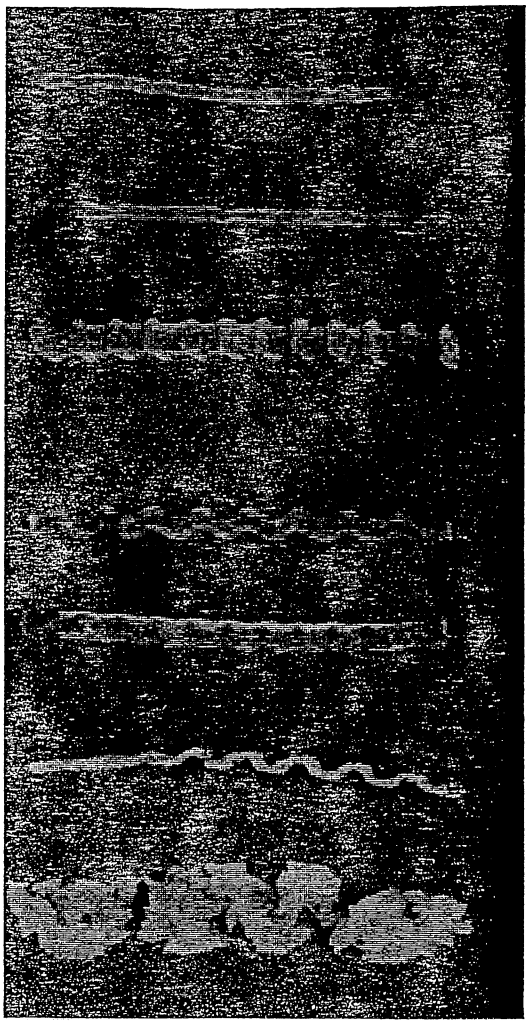

FIGURE 4: TYPICAL DISTORTED EXTRUDATES, illustrating some of the many varieties of melt fracture. a: Rigid polyvinyl chloride showing surface fracture. b: Polyethylene showing bamboo fracture. c, d, e: Polypropylene viewed from various angles, showing spiral melt fracture. f: Polymethylmethacrylate showing spiral fracture. g: Polytetrafluorethylene showing gross melt fracture. (From C. J. S. Petrie, M. M. Denn, Am. Inst. Chem. Engng. J. 22, 209, 1976.)

apparent discontinuity, sometimes called spurt flow, of the flow curve (that is, shear stress versus shear rate), which causes distortion of the extrudate from a controlled pressure device. Both of these phenomena are of technological interest. The formation of surface roughness is a limiting factor on the rate at which acceptable film can be produced. The occurrence of spurt flow is beneficial in some processes, permitting extrusion to be done at a lower pressure or higher rate than if it did not occur.

Edward Bagley and his coworkers at Canadian Industries Ltd first observed spurt flow in the then newly introduced high-density polyethylene. This polymer is nearly linear, in contrast to the earlier "conventional" (low-density) polyethylene, which has many side branches emanating from the polymer backbone and is long enough to entangle. These long branches have profound effects on rheological behavior, including the suppression of the flow discontinuity. This phenomenon is illustrated in figure 5. Ascending the left branch of the flow curve, point A represents the conditions of pressure or flow rate when the flow jumps to point B on the right branch.

The rheometers most commonly used today are speed controlled. If a speed is selected at some point within the transition, the pressure and instantaneous flow rate oscillate, and the appearance of the extrudate changes periodically, giving rise to what is sometimes called bamboo fracture. This spurt effect can be attributed to loss of adhesion to the die wall due to a transition of the melt to a rubbery state under conditions of high shear stress. The jump in flow rate, therefore, is caused by massive slippage of the material near the wall. However, there are schools of thought that attribute the spurt effect to the bulk properties of the polymer itself, rather than to slip.

One idea that has been revived and elaborated is that the spurt effect is the result of a constitutive instability. Some constitutive equations predict that the flow curve will be double valued for some ranges of stress, accounting for the two branches of the flow curve. Supporting these theories are the experimental data for polymers whose molecules all have the same molecular weight can be fitted with reasonable values of a characteristic elastic modulus, and for a range of molecular weights. Arguments against these theories are that they do not account for the lack of spurt flow for most polymers, that the molecular theory would not be expected to predict its existence for the high-density polyethylenes of broad molecular-weight distribution, and the failure so far to measure the theoretical parameters quantitatively by independent measurements. A second theoretical suggestion that has been discussed, but that apparently has not been developed to the point of quantitative prediction, is that the spurt effect (and manifestations of extrudate distortion) is the result of a change in the type of applicable hydrodynamic equations when a critical velocity is reached for the viscoelastic constitutive equations that permit instantaneous elastic response. Materials obeying these constitutive equations permit the propagation of shear waves.[15] However, it has been pointed out that the very condition necessary for this picture, a zero "retardation time," is exactly contrary to that required for the constitutive instability models to have multivalued flow curves.[4] This paradox is as yet unresolved.

Another surface defect is the so-called sharkskin effect, a small-scale periodic roughness.[16] For a number of years, its origin had been thought to be an exit fracture phenomenon, resulting from the high acceleration of the surface elements of the extrudate that is required to equalize the axial velocities of the melt once free of the die wall. In the 1980s, however, Stuart Kurtz at the Union Carbide Corp pointed to an apparent coincidence of the onset of sharkskin with a change in the slope of the flow curve. Motivated by the effectiveness of certain additives in suppressing or minimizing sharkskin, by observations of the influence of the material of construction of the die's composition and by the attribution of the slope change to slip, A. V. Ramamurthy, also at Union Carbide, proceeded to make measurements of the slip velocity. He used the Mooney method, in which the slip velocity, assumed to depend only on the shear stress, is inferred from the apparent diameter dependence of the viscosity. And, indeed, Ramamurthy found a coincidence of a "critical" stress for the onset of sharkskin. These findings have triggered an avalanche of studies of the slip phenomenon—and a concomitant amount of controversy.

Is slip the result of loss of adhesion of the melt to the wall, or of disentanglement of the bulk material from a highly adsorbed layer at the wall? Does it depend upon

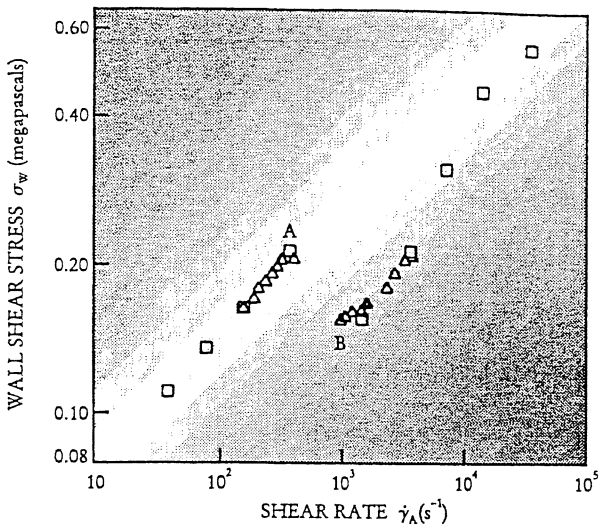

FIGURE 5: APPARENT FLOW CURVE of a resin showing two distinct branches. No steady flow is possible for apparent shear rates between those corresponding to points A and B. Triangles represent oscillating flow; squares, steady flow. (Adapted from S. G. Hatzikiriakos, J. M. Dealy, J. Rheol. 36, 845, 1992.)

hydrostatic pressure, and if so, how? What is the dependence of slip velocity on molecular weight and on chemical structure, which affects entanglement density? Can the constitutive and hydrodynamic instabilities be differentiated from slip? Can slip be due to the existence of a highly mobile layer in the high-stress region near the wall? An ordered "nematic" state, a stress-induced migration of low-molecular-weight species to the wall and a disentangled melt have all been proposed as candidates, with some experimental support for each. It should be noted that the measurement of slip is subject to many experimental difficulties. It may be advantageous to consider direct optical measurements of velocity profiles rather than inference from macroscopic measurements.

Liquid crystal polymer rheology

Liquid crystals have long-range order of molecular orientation, which results in crystal-like anisotropy of properties such as optical birefringence and viscosity. However, liquid crystal molecules do not have long-range order of position, crystal po mental a Kevlar in Co. The of this ma mechanic behavior are forme these sol viscosity tion, is ess acceptable

The a polymers– state to t a suitable esses, suc feasible. These dis 1980s, to t become liquid crystalline solely as a result of an increase of temperature, and are thus amenable to conventional plastics processing as well as fiber spinning. These materials are principally aromatic ester copolymers. At about the same time it was discovered that various cellulose-based polymers (especially hydroxypropylcellulose), which had long been articles of commerce, would also form lyotropic and thermotropic liquid crystal polymers.

The theoretical framework for the study of the rheology of liquid crystal polymers is based on the molecular theory of solutions of rigid rods, which predicts the dramatic decrease of viscosity illustrated in figure 6 and its scaling with the polymer's molecular weight.

Nature of Viscoelastic Materials

Polymers in concentrated solutions or melts can be pictured as forming a network of temporary junctions, as illustrated in figure 2. These fluids generally exhibit a viscosity that decreases with increasing rate of deformation. Moreover, they are viscoelastic in character. A classical manifestation of this property is the Weissenberg effect, in which the fluid climbs an immersed rotating rod, inverting the vortex that is observed when a rod is rotated in a Newtonian fluid.

When a polymer network is deformed by the action of a moving surface, the effect of Brownian motion to restore the isotropic network generates tensions in the flow direction and in the normal (perpendicular) direction. These tensions, the "normal stresses," are very important in the quantitative description of viscoelastic effects. An example of such an effect is the swelling of a material being extruded from a capillary. This phenomenon is obviously important to consider in industrial processes such as fiber spinning and film extrusion.

Less frequently discussed effects that illustrate differences between the behavior of Newtonian and non-Newtonian fluids are shown in figures 1 and 3. Figure 1 shows a jet emerging from a nozzle that is being subjected to a transverse vibration. The Newtonian fluid (frame a) breaks into droplets. A concentrated polymer solution (c) emerges as a structurally stable nonuniform wave. Dilute polymer solutions (b) exhibit a behavior that is in between; that is, the droplets are connected by a thread. Figure 3 illustrates the shapes of bubbles of different volumes in a viscoelastic polyacrylamide solution and in a Newtonian glycerine solution. Different degrees of magnification were used to better portray the shapes, especially for the small-volume bubbles. Note the striking difference in bubble shape between frames c and d. They both portray a 1 ml air bubble, but the one in frame c is rising in a viscoelastic solution whereas the one in frame d is rising in a Newtonian fluid. Bubble shapes, except for very-small-volume bubbles, are not stable in Newtonian fluids. That is, several snapshots of the same-volume bubble would result in very different pictures. In viscoelastic fluids, however, the shapes are stable and vary with increasing volume, from a spherical shape to a prolate teardrop shape to an oblate cusped shape and finally to a spherical cap shape. Studies of bubble dynamics are quite important, as a variety of industrial phenomena rely on mass transfer, resulting from gas–liquid contact. Some processes, such as fermentation, require a large area for mass transfer, from a large number of small bubbles. Separation processes, on the other hand, are facilitated by coalescence of fast-rising large bubbles.

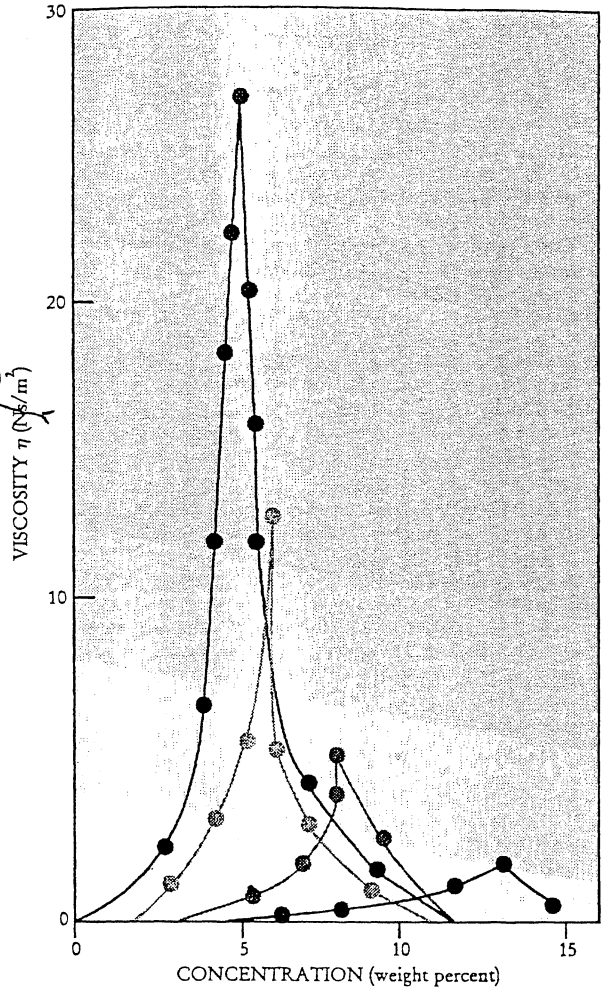

FIGURE 6: CONCENTRATION DEPENDENCE of the viscosity of solutions of polyparabenzamide. The four curves correspond to solutions of polyparabenzamide of decreasing (from left to right) molecular masses in dimethylacetamide/lithium chloride. Each curve shows a decrease of viscosity upon transformation to the liquid crystal phase. (Adapted from ref. 17, chap. 1.)

Of the many unusual rheological phenomena exhibited by liquid crystal polymers, one of the most crucial for arriving at the present level of understanding was the observation of a negative primary normal stress difference in steady shear flow.[17] This property contrasts with the behavior of almost all other materials in the absence of an inertial effect. It is manifested by a tendency to pull together, rather than to push apart, the fixtures of a cone-and-plate viscometer, in which the test sample is confined between one fixture that is rotated while the other is held stationary. The explanation of this phenomenon was found to rest on the fact, originally unexpected, that liquid crystal polymers tend to "tumble" in a shear flow, rather than to align at a small angle to the flow direction, which is the most commonly observed situation with low-molecular-weight liquid crystals.[18] Clarification of this question has led to a clearer understanding of many other observations, including the occurrence of a very large number of defects (disclinations) in the orientational order of liquid crystal polymers.

The persistence and the high density of these defects, which are particularly pronounced in the thermotropic polymers, are believed to be responsible for the as-yet-unexplained rheological phenomena of liquid crystal polymers. The outstanding problem is the existence of so-called "region I" behavior, characterized by shear-thinning viscosity at very low shear rates. Associated with this behavior is a change of defect texture with shear rate and, conversely, an effect of the texture on the viscosity. Complex effects of shear history, nonlinear pressure gradients in flow through a tube or slot and the occurrence of a contraction of the thickness of an extrudate (in contrast to the usual expansion) are all believed to be the result of this interaction between defect texture and rheology.

Not discussed at all in this brief exposition is the growing interest in "side chain" liquid crystal polymers, whose liquid crystal molecular subgroups are pendant from the polymer backbone, rather than forming the backbone as in the polymers discussed above.

Future developments

Although prediction of the direction of scientific advance is notoriously hazardous, three specific trends in rheological research can be discerned at this time. First, the study of materials, such as dendrimers, which are more complex than the homogeneous linear polymers that have been the subject of so much research in recent decades, will become increasingly important. Second, observation of the structure of materials while they are being deformed is becoming an essential tool for rheology. In part this trend is motivated by the need to understand the coupling of structure and deformation of complex substrates, and in part by the increasing ability to apply tools such as nuclear magnetic resonance imaging and high-intensity x-ray diffraction. And third, as in all fields of science, numerical simulation on all scales, from molecular to macroscopic, is an increasingly valuable adjunct to classical theoretical and experimental studies.

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To: Jim Stith
From: Steve Benka

11-15 June 1998

This is my response to those parts of Jeff Schmidt's memo of 27 April 1998 that are aimed primarily at me, or that I feel very strongly about. The numbered paragraphs correspond to the circled numbers in the attached copy of the memo.

(1) Jeff and I had both agreed to at least one change in our initial discussion of the review. We agreed to change "imminent fatherhood" to "cancelled paternity leave." His allegation is unfounded. I am still open to making other changes, but many of his other requested changes would be inaccurate.

(2) The first I had heard of Jeff being engaged in any "organizing activity" was from Jeff, in our discussion of his performance review. His claim that the review is punitive for such activities, of which I was unaware, is unfounded. That is not to say that I was unaware of his influence over others on the staff, but that is a long way from "organizing activity" and I for one never made that leap, nor did it ever occur to me to make such a leap. When he first mentioned it to me, my first words were, "What organizing activity?" Both Toni Feder and Paul Elliott deny that there was any "organized activity."

(3) I am always open to discussion about reviews, and to making warranted changes as a result. Jeff knows this full well from his previous reviews. As noted above in (1), at least one change had already been agreed to before discussions ended.

(4) Jeff's timeliness is excellent. Adopting Jeff's wording, however, would misrepresent his work. The statement in the review is both positive and accurate. The Mourou article (1/98) closed on day "zero," whereas articles are scheduled to close no later than day "minus one." The Libicki article (9/97) closed on the map day, day "minus nine," indicating that it was ready very early. I'll be happy to note that in the review.

(5) Jeff did at best the same amout of work as last year. By his own counting, he did significantly less. See (8) below.

(6) It's not clear what Jeff's accusation is here. He seems to think that getting the next magazine out should not be a top priority. It is. Working ahead is also a high priority, as I've repeatedly made very clear to all members of the staff, starting with my very first staff meeting in 1994. Jeff seems to be complaining about being given the freedom to do that, while at the same time boasting about having invented the concept and somehow manufactured the necessary freedom. This whole paragraph is confusing, but it leaves the impression that the entire magazine exists to serve his needs..

(7) Jeff's memo is a red herring, as my reply to it made clear. He makes no mention of the fact that he had asked for paternity leave and requested that he be divested of all articles. I accommodated his request. After we had made the necessary internal adjustments to keep the article pipeline flowing, he changed his mind, cancelled his request for paternity leave and insisted

on being given ready-to-edit articles so he could meet his production goal.

[My interpretation of his memo (and general attitude), both then and now, is that Jeff is attempting to transfer the responsibility for any and all problems (real or imagined) to management. I believe his basic premise is that employees are virtually flawlwss while managers are so flawed as to have no hope for redemption.]

(8) The adjustment to Jeff's job description was intended as a (largely artificial) way to arrive at the "mutually acceptable state of affairs" I had mentioned in my reply to his memo of 8/18/97. The idea, as I had made clear to him, was to reduce his production goal to one that he could meet, following the foundered paternity leave request. Even so, he came up short. I feel it is fair to include his work on Goldstein, which was completed during this review period, but not published. In addition, although Jeff had at one time indicated it could easily run as a single, long article, we ultimately decided to split it in two --- and I gave his credit for two in his performance review. Thus, in my view, Jeff met his reduced production goal. [By his own count, however, he came up two articles short and should therefore have his rating lowered from 3.0 to 2.0 or 2.5. I am opposed to that.]

(9) The (personal) reason given was correct. His request for paternity leave is easily verified with Human Resources: Susan Funk had looked into getting the needed paperwork done.

(10) There was nothing "secret" about my actions. Jeff was not in the office, so I left my draft of his new job description in his mailbox. When he returned, he asked for and received a note saying that this job description would go into effect immediately. He certainly didn't register any complaint about "secret alterations."

(11) I didn't respond to Jeff's memo of 9/2/97 because I saw it simply as an attempt to bait me. His version is that my lack of response means I don't dispute its contents, whereas in fact I found it (then and now) to be false and misleading, and only worth taking time out from the magazine's business if so advised or directed. Charles advised me not to reply and I happily agreed.

(12) Jeff did a good job on the Parsegian article, which filled a hole in the editorial calendar (not in the magazine). That is, there *was* a minor crisis when the article on biological physics that I had targeted for that issue (in order to fulfill the editorial calendar) needed to be postponed one month. [It's not a disaster if we fail to meet the editorial calendar (though Advertising doesn't like that); we just put a different article in the magazine and point out the disclaimer in the Media Kit.] I would be happy to mention Jeff's good work in his review, though I won't inflate it quite as much as he does.

(13) Jeff is correct that the list of articles he turned down could appear elsewhere. I put it where it is as evidence that he could have met his performance goal had he so chosen. It can also go under Major Responsibility 3, as evidence that he does not support the overall editorial effort of PT. I would be happy to move it there.

(14) The Mourou article would not have been excellent, it would have been wrong. Jeff had made several errors of notation (using lambda instead of gamma) and of physics (incorrect

expression for relativistic mass) that no proofreader would have caught.

(15) The issue is not advice, but supporting the editorial effort of PT. Throughout the year (and in fact for many years) Jeff has agitated the staff and sowed discontent and poor morale without cause. He had gotten so out of hand that he was reprimanded on 10/1/97. That reprimand was later rescinded (on 12/2/97) with the understanding that we would all behave ourselves. Within a week or two of then, however (the date is uncertain as I failed to write it on the documentation), Jeff had roused Warren Kornberg to anger with false charges agoinst me. That incident could surely be noted on his review. A second example is typical: On 11/26/97 he asked Susan Funk to do some of his clerical work, though he knew that wasn't her job and that I had repeatedly asked him to do such work himself. A short time later Jeff put a note (enclosed) in my mailbox. Susan came to me and was very upset that she had to do his work. In my opinion, Jeff's actions in this instance (and in many others) are aimed at supporting Jeff, not the editorial effort of PT.

(16) It is true that I told Jeff he needed to do more. He said he wanted to grow in other directions at the magazine, such as reporting. I said that would not happen while I was the Editor. I reminded him that he had gone digging for information on the Physics department at the University of Maryland, and that that unauthorized "reporting" had nearly caused a deep rift between PT and that department. See my memo to Marc Brodsky.

(17) Jeff is mistaken that others haven't been asked to step up their workloads, and did so. For example, in 1995 Bert Schwarzschild was asked to increase the number of Search stories and edited articles that he produced, and he did so. Together with the number of stories and articles he pursues that don't check out (a common occurrence), Bert is fully engaged, or very nearly so. Jeff, who is not asked to check out stories or potential articles, in my opinion is not fully engaged.

(18) This is gross misrepresentation of what happened. As noted above in (2), I had no knowledge of "organizing activities." What I indicated would not be tolerated is disruptive and counterproductive behavior. This is typical of Jeff, putting his words into someone else's mouth, then accusing that person of saying those words. It was my opinion during that discussion with Jeff (and remains my opinion) that his claim of "organizing activities" is little more than a smoke screen to protect himself.

(19) I have no idea what Jeff is talking about here. I have no knowledge of any grievances of Charles Harris or Marc Brodsky that the performance attempted to "redress."

(20) Jeff's assertion that affirmative action turned management against him is without foundation. At the 1996 retreat, I scheduled this topic high on the agenda because, as I told the staff, I thought it was a "no brainer." Subsequently, I happily and willingly took steps, unprecedented at PT, to pursue affirmative action. See my email to Melinda Underwood and Jean Kumagai's supportive response after I informed the staff of what I had done. I don't understand Jeff's allegation.

(21) I made no such statement. My account of the events, written over that evening and the next day, is attached.

(22) This is a matter for next year's review, but notes and documentation are available.

Concluding thoughts:

This document and assembled package of materials has taken an enormous amount of my time and energy, time and energy much better devoted to the magazine and to my family. Others' time and energy has also been usurped.

In my opinion, Jeff's "response" to his performance review is a mixture of fabrication, wishful thinking, and manipulative misrepresentations. In my opinion, it was deliberately calculated to cause as much mischief as possible for management, not just of PT but for all of AIP, while keeping himself as protected as possible.

I now know that Jeff surreptitiously distributed his highly inflammatory "response" to at least two members of the PT staff (one of whom, Barbara, told Jeff she didn't want it but he sent it anyway). Probably more than two received it. In my opinion, that was a deliberately malicious act, targeted at management, with no possible constructive goal. In my opinion, that action alone is grounds for termination with cause. At the very least, I believe Jeff should be reprimanded and that the reprimand not be rescinded.

I can handle the pressures of the Editor's seat. I find it very difficult, however, to pretend that Jeff is a constructive, helpful member of the PT staff.

PT LETTER TO THE EDITOR/Review Form

RETURN TO PAUL BY: Asap

REVIEWER: JEFF Date Assigned: June 12, 1998

Date Completed:

WRITER(S): Julcon Schiss MS #

SUBJECT: Goldstein's articles in March and April Issues

REVIEWER'S COMMENTS:

[Jeff: references are incomplete because of compromised electronic transmission] ← I'll review it anyway and just do the best that I can under the circumstances.

This is one of the more important and interesting of the score of Goldstein letters that we have received. That's because it gets at the metaphysics that usually goes unspoken even though it plays a determining role in quantum theorizing. (The metaphysics is the unquestioned assumptions, or "commitments," to use one of Schiss's words for it; another of his words for it is "price.") An answer from Goldstein would be nice but is not as necessary as it is with the other letters. — JS 12 June 98

REVIEWER'S RECOMMENDATION:

- ✓ Accept
- ___ Accept/Staff Revise
- ___ Provisionally Accept/Author Revise
- ___ Reject
- ___ Other (Specify)

To SB 18 June

STEVE'S COMMENTS: The author takes "one step beyond Goldstein" in 93, but never explains what that step is. As a result, the letter is muddled and doesn't hang together. I asked Bert for another reading, and he had precisely the same reaction as me. He says an option would be to ask for a shorter, clearer letter but his preference is to just reject it as too muddled. That's also my opinion. Reject. — Steve 6/18/98

D00477

Quantum Theory Without Observers — And Without Additional Equations

J.M. Schins, Twente University, P.O. box 217, 7500 AE Enschede, The Netherlands

Quantum philosophy is going radically different ways. To one side of the spectrum, one has the many-minds interpretations. They combine an amateurish psychology with a strong propensity for paradoxes. The reader is referred to Michael Lockwood for 'maximal experiences' versus dreamless sleep, for what it feels like to 'be in two minds', or for the dangers to get involved with 'mindless hulks'[1]. These are the consequences of committing oneself to denying nonlocality in nature.

Somewhere in the middle stands the traditional interpretation, as initiated by Von Neumann and Dirac. By now it seems clear that such an interpretation can never yield a consistent foundation of quantum mechanics due to the contradictions implied in measurement theory. These are the consequences of committing oneself to identifying the wavefunction with the object it decribes. Bell never lost an opportunity to criticize the arbitrariness of the subdivision of the world into a 'quantum' system and a 'classical' apparatus, a fundamental tenet of the traditional interpretation [2].

Goldstein occupies the other side of the interpretation spectrum (Physics Today, March and April 1998, pages 42 and 38 respectively), in advocating a hidden-variable approach. His preferred model is Bohmian Mechanics. Although Bell was a strong promoter of that model, he never fully endorsed it, for two reasons: first, he did not like that photons describe curved paths in force-free space, and second, there exists no satisfactory interpretation for the density matrix [3].

Bell's and Goldstein's efforts are highly valuable because they recognize the philosophic poverty implied in an observer-dependent approach. The importance of the ontological discussion (the question what quantum theory really is about) may be judged from the fact that, on making one step beyond Goldstein, one obtains an observer-free interpretation of quantum mechanics, which is at the same time free of additional equations. At the price of releasing full predictability. That is to say, one has to admit that nature cannot be fully grasped by man in a most fundamental manner.

What does this view lead to? First, it supposes that the wavefunction collapse is an epistemologic notion: the collapse has no counterpart in reality, but only signifies the observer's knowledge of reality. As a consequence, the initial state wavefunction is as much a collapsed wavefunction as the final state wavefunction is. Such a collapse represents the highest amount of knowledge that one can have of a quantum system. The release of full predictability implies that nature is richer than any wavefunction can possibly describe: there cannot be a one-to-one relationship between the wavefunction and the object described by it [4].

Releasing the one-to-one correspondence of wavefunction and object simply evaporates Schrödinger's cat paradox: there is nothing against reality being distinct (the cat is either dead or alive) while the wavefunction is fuzzy. In much the same way the preferred basis problem, inherent in nearly all quantum philosophies, is solved. As is known, this basis can hardly —if not impossibly— be determined from arguments *from within*, that is to say, based on quantum theory exclusively. If nature is ontologically richer and fundamentally unpredictable, it is very plausible that the knowledge implied in writing down an initial state wavefunction requires more than just

quantum mechanics. Of course, there is no objection against writing down an initial (or final) wavefunction as a sum of philosophical opposites. It will yield true, beautiful, and perfectly consistent quantum calculations. Just do not expect that these calculations will be of any help at the moment of extracting knowledge from observations. That some calculations are useful and other not, is finally due to the kind of connection between formalism and reality. If reality and formalism are identical, the connection is trivial, and all calculations should be equally relevant for the scientific enterprise. But if reality is richer than formalism, not just temporarily, but in a fundamental manner, then there is no inconsistency in solving the preferred basis paradox with a reference beyond the strict scope of quantum mechanics.

I want to conclude these remarks with a reference to mathematics, where very similar problems occur, as far as the ontology is concerned. In 1931 the Austrian Kurt Gödel formulated a true but formally undecidable proposition [5]. This achievement abruptly put an end to Hilbert's quest of the holy grail: an algorithm that was to solve all possible mathematical problems [6]. Penrose has shown convincingly that Gödel's achievement cannot be understood without reference to an external, objectively existing world [7]. This mathematical world has the same characteristics as our quantum world: it is the measure of truth, and it can be known by man, though not exhaustively. There will always exist a Gödel truth that no one knows about, just like there will always exist an experiment yielding new, unpredictable data.

References

1. M. Lockwood, *Br''* . 47 (1996) 159
2. J.S. Bell: "It would seem that the theory is exclusively concerned with 'results of measurement' and has nothing to say about anything else. When the 'system' in question is the whole world, where is the 'measurer' to be found? Inside, rather than outside, presumably. What exactly qualifies some subsystems to play this role? Was the world wave function waiting to jump for thousands of millions of years until a single-celled living creature appeared? Or did it have to wait a little longer for some more highly qualified measurer – with a Ph.D.?", in 'Speakable and Unspeakable in Quantum Mechanics', Cambridge University Press (1987) 117-138, reprinted from 'Quantum Mechanics for Cosmologists', in Quantum Gravity 2, eds. C. Isham, R. Penrose, and D. Sciama, Clarendon Press, Oxford (1981) 611-637
3. J.S. Bell, 'De Broglie-Bohm, delayed choice double slit experiment, and density matrix', in 'Speakable and Unspeakable in Quantum Mechanics', Cambridge University Press (1987) 111-116, reprinted from *Internat''* , Quantum Chemistry Symposium 14 (1980) 155-159
4. The fact that nature has properties that the traditional quantum doctrine does not acknowledge is easy to appreciate from a thought experiment where a photon successively passes through two holes. Since there is no detector implied, there is no collapse, according to the traditional interpretation. But whenever a photon travels from one hole to the other, both its position and impulse are defined with arbitrary accuracy. Denying the existence of such a property implies, in the traditional interpretation of quantum theory, denying the concept of a photon path. Which is rather awkward, though not inconsistent. The interpretation of multiparticle interferometry experiments heavily relies on the concept of photon path: see D.M. Greenberger, M.A. Horne, and A. Zeilinger, 'Multiparticle Interferometry and the Superposition Principle', Physics Today 8 (1993) 22-29
5. K. Gödel, *Monatshefte fur Math. und Phys.* 38 (1931) 173
6. D. Hilbert (tenth problem), Second International Congress of Mathematics, Paris (1900)
7. R. Penrose, ÔThe Emperor's New MindÕ, Oxford University Press (1989) and ÔShadows of the MindÕ, Oxford University Press (1994)

AMERICAN INSTITUTE OF PHYSICS

INTER-OFFICE MEMORANDUM

TO: Jeff Schmidt

FROM: James H. Stith **EXTENSION:** 3126

DATE: June 24, 1998

SUBJECT: Performance Review 1998

As requested in your memorandum of 27 April 1998, I have completed my investigation of the issues surrounding your 1998 performance review.

While issues that have impact upon the climate within **Physics Today** were uncovered, I did not find sufficient reasons to justify a change in your 1998 performance review.

I trust that you and the management of **Physics Today** will be able to delineate clearly the goals, level of performance and criteria for evaluation that will determine the basis for your 1999 review. Once this is accomplished, I anticipate a return to a level of performance and an evaluation that both you and management find satisfactory.

Cc: Theresa Braun
Steve Benka
Charles Harris

From: "Jeff Schmidt" <jschmidt@aip.acp.org>
To: ACP.ACPgate("bgl@worldnet.att.net")
Date: 7/16/98 2:27pm
Subject: Guilty -- but not as charged

Dear Barbara,

Many people have been asking me what response I got to my performance review appeal. So here's a summary.

As you recall, my appeal stated that compared to the previous review period, I did more work and more innovative work. Yet Physics Today publisher Charles Harris and editor Stephen Benka rated my job performance lower. (They lowered my rating from above average to average.)

As you also know, my appeal had two parts. The first part challenged the accuracy of what the managers wrote about my job performance. It argued that what they wrote ranged from grossly understated praise to completely contrived examples of deficient work. I refuted the allegations and falsehoods point by point, drawing on the written record of what had happened. The second part of my appeal offered an obvious explanation for the unfair assessment: It was a response to my speaking out about staff concerns and working with other staff members to address those concerns.

I submitted my appeal to Jim Stith (Harris's supervisor) and Terri Braun (American Institute of Physics Director of Human Resources). For two months I heard nothing. Then, just recently, Stith met with me to convey AIP's decision. Our two-hour meeting focused on both the performance review and my severe written criticisms of it.

Stith did not defend the performance review's faint praise or its negative statements about me. Nor did he take issue with my detailed claim that the review makes many false statements about me. Nevertheless, Stith told me that he had decided to leave all of these statements on my performance review (and thus in my permanent personnel record) without making any changes at all. He explained that he had talked to Harris and Benka, and they had told him other things about me, things not mentioned in the written review, and these things justified the lowering of my job performance rating. I asked him what these things were, but he declined to say. I pressed him hard to tell me, of course, but he refused to do so, saying that he didn't want to get into the details. "So you found me `Guilty -- but not as charged,' and you won't tell me the real charges," I said to Stith. "This is Kafkaesque." He did not respond.

Although Stith refused to reveal any specific examples of my supposedly

deficient job performance, he did identify my problematic work in general terms. And the problem was clearly my organizing activity, just as I had claimed in my appeal. Stith told me that when you do things that your supervisors would be happier that you not do, then you have to be willing to pay the penalty, even if what you do is right. I disagreed, of course. He told me that for a time in his younger days he challenged the status quo. He said that even after the status quo yielded to change, he still had to pay a price for his actions, implying that paying such a price was right.

I told Stith that I expect him to make sure that people are not punished for doing the right thing. But he made it clear that he will not play that appellate role at AIP. He is evidently willing to back other managers even at the expense of justice. This continues the recently imposed love-it-or-leave-it policy at Physics Today, which has cost us three coworkers in the last few months and will continue to drive away talent until it is lifted. Finally, Stith offered a simple formula for professional success at Physics Today. Each member of the Physics Today staff should work hard to figure out what Benka wants, and then do that, he advised.

As you can see, my appeal of the statements made about me on my performance review has not yet been handled adequately. The next step will depend on suggestions that I get from you and other coworkers.

Jeff

CC: ACP.AIP(jschmidt)

From: Stephen Benka
To: jeff
Date: 7/27/98 6:11pm
Subject: Articles, various and sundry

Jeff,

I have left a copy of the 5-page "Articles at a Glance" memo on your desk. As we've discussed before, you should get more involved in the acquisition process. To that end, please choose at least 5 or 6 of the "recently solicited" articles (from pages 2--4) that haven't already been assigned (on page 5 of the memo). We can discuss them next week, before you make contact with the authors.

You are also free to try talking Bert or Chas out of any of their articles, thereby freeing them up for more Search.

Note that I have assigned the Abrikosov article to you. I know you have reviewed it, but the review did not make it into the file, which is now on your desk. My hazy recollection is that you thought it posed a dilemma --- well written but uninteresting (or some similar poser). Gloria has now gotten comments from the outside, with the conclusion that we should publish. See her for further details. I'll read it soon and should have comments by some time next week.

Did you get back to Canfield with a request for a revision? Recall that he has just a small window of opportunity for working on the article. I therefore assumed that you and he will work quickly, and I scheduled it for October.

I've nudged the second Redish reviewer (Jim Stith). There is still a chance that that article could make it for October, which would be great, but I've bumped it to November on the schedule.

As you know, I'll be here tomorrow if you'd like to discuss any of this. Otherwise, let's sit down next Tuesday morning, in preparation for the afternoon articles meeting.

--Steve

From: Jeff Schmidt
To: SBENKA
Date: 7/27/98 10:42pm
Subject: Articles, various and sundry -Reply

Steve --

Thanks for responding to my request, made in my phone call to you today, for articles ready to edit. As you suggest, I will look over the "Articles at a Glance" memo with the goal of choosing some of them. Also as you suggest, let's talk before the Tuesday articles meeting.

I am not sure that the Abrikosov article is right for me, but I will need to look at my review of the manuscript to know for sure. I will look for a copy of my review, although I may not have one.

Yes, I did get back to Canfield with a request for a revision. We had extensive communication by e-mail, fax, FedEx and telephone, and he is working on the revision.

-- Jeff

CC: jschmidt

From: Jeff Schmidt
To: SBENKA
Date: 7/29/98 6:07pm
Subject: Recently solicited articles

Steve --

I have now followed up on your suggestion that I look over the 27 July "Articles at a Glance" memo and choose 5 or 6 of the recently solicited articles that are not already listed by someone's name on page 5 of the memo. Although I had little more than the titles of the articles to go by, I think I could do a good job on the following 6 articles. (This number would in effect become 5 if I give up the Abrikosov article.)

1. Holton
~~2. Sentman~~
~~3. Siegel and Hu~~
~~4. Granick~~ — close
5. Hartmann
~~6. Dekker~~

-- Jeff

CC: i:JSCHMIDT@aip.acp.org

This is physics ... cite anything after 1995, or has no recent work been done? — SB 8/10/98

29 July 98

Steve — I want to send this to Bering to check. — Jeff

Jeff knew full well that I was on vacation 7/29 ~ 8/3.

THE GLOBAL ELECTRIC CIRCUIT

An electric current totaling one kiloamp worldwide flows from thunderstorms in the troposphere into the ionosphere and magnetosphere, eventually returning to the ground through the fair-weather atmosphere and closing via lightning.

Edgar A. Bering III, Arthur A. Few and James R. Benbrook

On a clear day, there is a downward electric field of 100 to 300 volts/meter at Earth's surface.[1] To explain this fair-weather electric field, William Thomson (Lord Kelvin) proposed that the ionosphere be viewed as the positive plate of a spherical capacitor charged to a potential of about 260 kilovolts with respect to the ground, which is the negative plate.[2] Today, we know that this capacitor discharges through the atmosphere, with an average current of about 1 kiloampere integrated over the Earth.[3,4] Three quasi-DC sources of electromotive force drive the global circuit: thunderstorms, a dynamo interaction between the solar wind and the magnetosphere, and the dynamo effect of atmospheric tides in the thermosphere.[5]

Thunderstorms are thought to be the most powerful of these sources by a factor of three.[5] The electric current that flows upward from thunderstorms into the ionosphere is known as the Wilson current, named for Charles T. R. Wilson, who in 1920 first suggested that thunderstorms play this role. This current spreads out over the globe through the ionosphere and also through the magnetosphere along magnetic field lines to the opposite hemisphere. The current returns to the surface of the Earth as the fair-weather air–Earth current. Cloud-to-ground lightning strokes such as the one shown in figure 1 return the charge to the thunderstorms and close the global circuit. This global process is summarized in figure 2, which also shows the location of the relevant layers of the atmosphere. Many attempts have been made over the years to confirm the Wilson hypothesis.[6]

In addition to the DC circuit, the neutral atmosphere between Earth's surface and the ionosphere behaves like a waveguide when excited with ultralow-frequency elec-

with induction coil magnetometers deployed at remote locations far from artificial electrical interference.

The global electric circuit is an old subject that has recently experienced a renaissance. Thus, mature models exist for both the AC and DC global circuits. However, owing to the difficulty of making measurements, these models rest on a small database. New instruments have allowed a critical reexamination of atmospheric electricity, and the results have challenged the standard paradigm of the global circuit.[3–5,7]

The conducting atmosphere

The "wires" in the global circuit are literally made of thin air. The exception is the "ground wire," which is the ground itself. Thus, we look first at the conductivity of the atmosphere. Ions strongly influence the electrical properties of the atmosphere, because positive and negative ions can be separated from each other to produce large-scale electric fields and because their presence in air produces conductivity. The principle source of ionization in the atmosphere below 30 km altitude is galactic cosmic rays. Collisions between cosmic rays and neutral molecules produce both positively and negatively charged molecules, mostly oxygen and nitrogen. (In the dense atmosphere, free electrons are almost nonexistent.) Within a few milliseconds, these $O_2^{+/-}$ and $N_2^{+/-}$ ions undergo ion chemical reactions and become hydrated with several water molecules (typically 6 to 8, but at cold temperatures as many as 20) to form "small ions" such as $NO_3^-(H_2O)_8$ or $H_3O^+(H_2O)_6$. In the lower atmosphere, the recombination lifetime for these ions is typically five minutes. If aerosols such as cloud or fog droplets, haze or pollution particles are present, small ions attach to

Jeff, our guidelines call
r SI units. We shouldn't
slipping between bar and
r as much as we do in
is article. If you can
these occurences quickly,
eat. If not, we'll live with it
time. In the future,
to better adhere to SI.

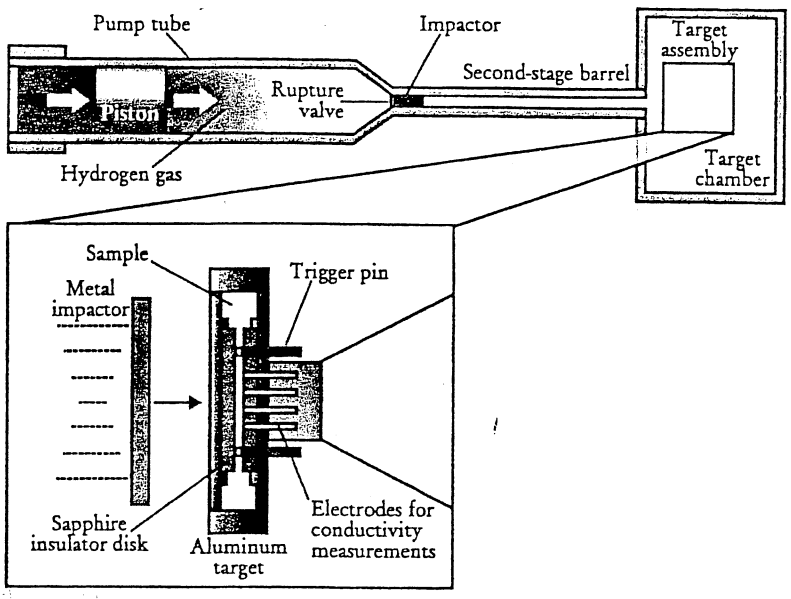


FIGURE 2. SHOCK-WAVE COMPRESSION SCHEME for achieving ultrahigh [illegible] This diagram shows the

l-closed-packed metals with identical densities at megabar pressures.

Pressure-induced insulator-to-metal transitions have been documented in a long list of materials and over a broad range of pressures, from low pressures of much less than 1 GPa to high pressures well above 200 GPa. One of the most well-studied of these materials is the technologically critical element silicon, which transforms at low temperatures (it is a metal in the fluid state) from the familiar diamond-type semiconductor phase to the metallic β-tin structure at 12 GPa.[1] As pressure increases further, there follows a sequence of transitions culminating in the face-centered cubic structure, which is then stable to at least 300 GPa.

A quite different class of insulator/metal transitions is illustrated by iodine, which forms a diatomic molecular solid at normal conditions but transforms to a metallic phase under pressure while still essentially preserving its molecular state. In fact, iodine also exhibits a sequence of crystallographic transitions culminating in the formation of a face-centered cubic metal at about 50 GPa, this structure persisting well into the multimegabar range (to at least 275 GPa).[3]

Silicon and iodine are of interest for another reason. They share a striking property common to many of the "new" metals formed under pressure: Several high-pressure phases of silicon and also the dense face-centered cubic phase of iodine are superconductors at low temperatures.

Element one

The behavior of molecular solids under pressure leads naturally to one of the preeminent goals of high-pressure research—to elucidate the potentially rich high-density physics of the most abundant element, hydrogen. Among the elements in condensed form, hydrogen is unique. It is the only quantum molecular solid, with molecules that are so light and that initially interact so weakly that they freely rotate in the one-atmosphere crystal, even at the lowest temperatures. And the molecular solid formed by those melecules is a tenacious insulator.

Eugene Wigner and Hillard Huntington of Princeton University predicted in 1935 that at extreme pressures, hydrogen molecules would dissociate in favor of a monatomic metal. Their one-electron treatment of equation 2 led to the prediction of a new minimum in the low-temperature equation of state (the energy/volume relation) for the body-centered cubic structure at about eight-fold compression. But their seemingly plausible assumption, that a Bravais lattice structure could exist at this compression, is now known to be incorrect. Even at this high density, the ensuing lattice remains unstable to pairing of protons, and the length of the bond that forms still remains close to the one-atmosphere value of 1.4 a_0. In 1968, Neil Ashcroft predicted that this hypothetical monatomic phase of dense hydrogen would exhibit unusual properties, including very high temperature superconductivity as well as a liquid-like ground state. More interestingly, theory indicated that hydrogen may become metallic prior to dissociation of the molecules, exhibiting behavior similar to that of iodine. But despite the theory's apparent simplicity (equation 1, for example), an accurate description of hydrogen's possibly unique "quantum metallic" properties, and the precise determination of the transition and other remarkable transitions now known to precede it, have been a potent challenge to state-of-the-art condensed matter theory. Quantum effects associated with the low mass of protons are particularly significant in dense hydrogen, and consequently, electron dynamics and proton dynamics must eventually be treated on the same theoretical footing. For this reason, putting the squeeze on element one has occupied the fancy of high-pressure researchers—experimenters and theorists alike—for over half a century.

Hydrogen has now been pressurized with the diamond cell, at relatively low temperatures, to the 300 GPa range,[4] yielding a more than 12-fold solid compression[5] and revealing behavior far more remarkable than expected. Unlocking the secrets of hydrogen along the path toward the eventual quantum metallic state has been a story not only of sleuthing but also of constant surprise. Spectroscopic measurements show that the molecular bond is indeed, as noted, a tenacious one: The molecular state of hydrogen persists to remarkably high pressures. Although pairing of the protons clearly prevails, striking changes in physical properties occur over this substantial range of compression. Infrared spectroscopy reveals a three-orders-of-magnitude increase in absorption of the intramolecular stretching mode at a phase transition found at 150 GPa (figure 4).[4] This increase is extraordinary because such absorption vanishes by symmetry in the isolated molecule. At the same point, there is a decrease in the frequency of the vibrational mode.

The changes now being observed in hydrogen can be understood in terms of a series of symmetry-breaking

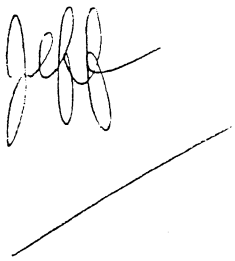
15 September 1998

To: Charles Harris and Steve Benka

From: Jeff Schmidt

Charles and Steve --

I would like to take a half-year unpaid sabbatical and then return to my job. The sabbatical would begin after I complete my work for the November 1998 issue, after I edit an article for an issue beyond November and once we have provided a means to cover my workload in my absence.



AMERICAN INSTITUTE OF PHYSICS

INTER-OFFICE MEMORANDUM

TO: James Stith

FROM: Charles Harris **EXTENSION:** 3102

DATE: 20 November 1998

SUBJECT: Leave for Jeff Schmidt

After 17 years with AIP, Jeff Schmidt would like to take a six-month "sabbatical" leave. From 14-31 December 1998, he will be on vacation, and from 1 January to 11 May, he will be on leave without pay. Upon his return, he will assume his regular responsibilities with the magazine. During his absence, his editing duties will be covered by cottage employees and independant contractors.

SCHMIDT.WPD

From: Stephen Benka
To: charris, Jstith, tbraun
Date: Fri, Dec 11, 1998 3:01 PM
Subject: Jeff Schmidt's sabbatical and review

Charles, Jim, Terri,

As you know, after today Jeff Schmidt will be on a six-month sabbatical, returning to work on 14 June 1999.

His next performance review is due on 15 February 1999, during his absence. In order to continue to review full 12-month work periods, however, he and I have agreed to postpone his next review by six months, until 15 August 1999. Subsequent annual reviews will thereafter be due on the 15th of August.

I know you'll join me in wishing Jeff a pleasant sabbatical.

--Steve Benka

CC: jeff

From: Charles Harris
To: JSCHMIDT, SBENKA, MUNDERWO, JSTITH
Date: Thu, Dec 3, 1998 10:27 AM
Subject: Interesting psychological phenomenon -Reply

"Charles --

I've mentioned to a few people that my sabbatical begins on 14 December and goes for six months. The first thing they usually do is calculate the ending date. To do that, they first figure that the sabbatical goes to May, and then they add 14 days, coming up with 14 May.

But I have invented an alternative method for calculating the ending date. Instead of figuring that the sabbatical goes "to" May, I figure that it goes "through" May. So instead of adding the 14 days to the beginning of May, I add them to the end of May, giving me a somewhat different result. Conveniently, 14 June 1999 is a Monday.

Jeff"

you are correct in your calculation. i would like to pretend that i made my calculations based on our earlier discussions of you taking leave before december, but in fact i too made the same error. i will notify human resources that your return will be 14 june 1999.

6/14/99 Jeff and I started to discuss his job expectations, and mine for him.

He still wants to "appeal" my insistence on 18 articles per year.

We agree in principle to what he characterized as a "vague" expectation that he make "positive" contributions to the office climate, editorial processes, and content of PT.

I pointed out that this calls for some changes in his behavior from last year, prior to his sabbatical, in which many of his actions were "decidedly not positive."

We agreed to talk further about these things on Friday, 6/18, or Monday, 6/21.

6/18/99

Jeff and I talked

7/29/99 (?? I no longer remember what, specifically, we talked about when I began writing this note. Perhaps it was my expectations for his performance.

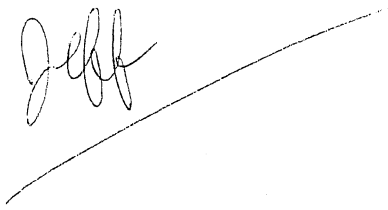
Shortly after his return from Sabbatical (on 6/14/99) I made it clear that we needed 18 articles and no more unacceptable behavior. As examples of the latter, I cited his circulation of his highly skewed distribe following his last performance review, and his attempt of an orchestrated rebellion at ~~last year~~ the Adv. Comm. Mtg of 1998. I told him those events would probably be mentioned in his next performance review.

29 June 1999

Steve --

I would like to work on a part-time basis. I would do 2/3 of the work for 2/3 of the salary.

This would solve the workload issue that you have raised, both within the new framework that you have asserted and within my capabilities (after all these years, at my age, I am not prepared to take on additional work). I would be happy to discuss this with you when you return from the July 4 holiday; I'll ask Tonya to let me know when you would like to meet.



From: Stephen Benka
To: Jeff Schmidt
Date: Thu, Aug 5, 1999 2:53 PM
Subject: Schucking and Birnbaum

Jeff,

Bert says that he will be able to produce both Barish and Schucking for the October issue. Therefore we will use the Birnbaum article in the December issue.

--Steve

CC: Bert Schwarzchild

I had asked Jeff on 3 Aug. to try to have Birnbaum ready for Oct., in case Bert couldn't complete Schucking (and Barish and Search stories...).

Jeff said he didn't think he could do it, even though the Will article was ready for his editing. I suggested that Will should be ready for copyediting by Friday (this was Tuesday). He was sure it would take longer. I pointed out that our freelancers have a cap of 40 hours per article, and haven't needed more than 30. Thus, he should certainly be able to edit an article within a week. With very rare exceptions (eg. Segev and Stegeman) it should never take more than a week's work.

—Steve 8/5/99

D00495

Notes: #of pages[editor's initials, day closed ("minus" is good)]article author

1997

January	7½[JS-2]Collins, 6½[JS-6]Weart
February	7[JS-1]Wheelon
----------REVIEW PERIOD ----------	
March	6[JS-7]Sales
April	7[JS-1]Ferguson, 7½[JS-1]Crabtree
May	
June	7½[JS-4]Crowley, 6½[JS-2]North
July	5[JS-2]Parsegian, 7[JS-5]Harris
August	6½[JS-4]Soulen
September	6[JS-9]Libicki
October	7[JS-5]Perl
November	
December	6[JS-7]Ross, 6[JS-7]Riordan

1998

January	7[JS-0]Mourou
February	
----------REVIEW PERIOD -----(18 articles required)----------	
March	6[JS-0]Sullivan, 6[JS-0]Barth, {5[JS-8]GoldsteinI, counted in previous review period}
April	6[JS-0]Ramaty, {5[JS-8]GoldsteinII, counted in previous review period}
May	8x5decades=40[all+3] Jeff gets 1/2 credit for one decade
June	6[JS-2]Dekee
July	6½[JS-2]Busch-Vishniac
August	6½[JS-7]Segev, 7[JS-1]Hemley
September	---
October	6½[JS-8]Bering, 6½[JS-1]Canfield
November	5.5[JS-3]Vogel
December	---

1999

January	6.5[JS-1]Redish, 6.5[JS-8]Ertl
February	
September	6[JS-7]Bernholc
----------REVIEW PERIOD ----------	
October	Will

1997

January	7½[JS-2]Collins, 6½[JS-6]Weart
February	7[JS-1]Wheelon

----------REVIEW PERIOD ----------

March	6[JS-7]Sales
April	7[JS-1]Ferguson, 7½[JS-1]Crabtree
May	
June	7½[JS-4]Crowley, 6½[JS-2]North
July	5[JS-2]Parsegian, 7[JS-5]Harris
August	6½[JS-4]Soulen
September	6[JS-9]Libicki
October	7[JS-5]Perl
November	
December	6[JS-7]Ross, 6[JS-7]Riordan

1998

January	7[JS-0]Mourou
February	—

----------REVIEW PERIOD -----(18 articles required)----------

2	March	6[JS-0]Sullivan, 6[JS-0]Barth, {5[JS-8]GoldsteinI, counted in previous review period}
1	April	6[JS-0]Ramaty, {5[JS-8]GoldsteinII, counted in previous review period}
½	May	8x5decades=40[all+3] Jeff gets 1/2 credit for one decade
1	June	6[JS-2]Dekee
1	July	6½[JS-2]Busch-Vishniac
2	August	6½[JS-7]Segev, 7[JS-1]Hemley
	September	---
2	October	6½[JS-8]Bering, 6½[JS-1]Canfield
1	November	Vogel
	December	---

10½ articles in 10 month
12½ in 11

1999

2	January	Redish, Ertl
	February	

----------REVIEW PERIOD ----------

PHYSICS TODAY
PERFORMANCE REVIEW 1999

August 13, 1999

Employee Name: Jeff Schmidt Job Title: Senior Associate Editor
Division: Physics Today Reports to: Editor
PERIOD: Feb 1998-Aug 1999 (PT issues March '98-Sep '99) - incl. 6-mo. sabbatical

OK? or not? Explain

Major Responsibility 1: Edit articles
Weight:80% Rating: 2.0 Score: 160

Comments: For this review period, Jeff was asked to produce 18 high-quality articles, and he actually produced 13.5, which is unacceptable. This counts his partial contribution to the May '98 50th anniversary issue as 1/2-article rather than 1, because he had to be removed from the project. Another editor stepped up and completed Jeff's job. Aside from that event, his editing was satisfactory. The reviewer recognizes that one of Jeff's articles (Segev, 8/98) was extremely difficult, and just making it publishable was a good accomplishment. Two other articles were assigned to Jeff on relatively short notice, and he completed them in time for publication.

Jeff now handles his own correspondence and keyboarding, as do the other articles editors. He needs to find ways of raising the level of the more unimaginative authors, through creative rewriting as well as editing.

Major Responsibility 2: Take responsibility for assigned articles
Weight: 15% Rating: 3.5 Score: 52.5

Comments: Jeff still does well in this area of his job.

Major Responsibility 3: Support the editorial effort of PT
Weight: 5% Rating: 1.5 Score: 7.5

Comments: During this review period, Jeff repeatedly engaged in disruptive behavior, damaging a collegial office climate and thereby undermining the editorial effort of Physics Today. Such behavior is unacceptable. Two examples will suffice.

(1) As noted above, Jeff was removed from working on the PT Anniversary issue. That was for two reasons: He produced a very unbalanced set of decadal excerpts, strongly centered on political issues, whereas he had been directed to focus on physics excerpts while his non-physicist partner focused on other excerpts. All five decades paired a physicist with a nonphysicist in that manner. When his partner pointed out the imbalance and made suggestions to fix it, Jeff rebuffed him, provoking his partner to quit. For his failure to produce excerpts consistent with the stated goal, and for his failure to work respectfully and collegially with a fellow editor, he was removed from the job, which was completed by his partner and another physicist on the staff who had already completed his decadal excerpts.

out of context

(2) Jeff wrote a response to his last performance review, as he is entitled to do. The response was ?? pages long and highly inflammatory in nature. Jeff made no attempt to discuss his response with his manager, but instead surreptitiously circulated it to PT staff members, whether they wanted to see it or not. Such an action seems to actively, perhaps even maliciously, undermine the cohesiveness and morale of the staff, as well as respect for management. Such an action in no way constructively supports the editorial efforts of PT; rather, it destructively undermines such efforts.

Appraiser's comments and Performance Plan: Jeff took a six-month sabbatical during this review period, from mid-December to mid-June. In the two months since his return, he has worked quietly at his job, and contributed positively in staff meetings.

effectively

At Jeff's request, his salary will be reduced by 1/3, and his workload will also be reduced by 1/3, to 12 articles per year. As always, the articles must be of high-quality, with Jeff editing and rewriting text as needed, handling his own correspondence and doing all of his own keyboarding. The articles must be consistent with the magazine's standards of accuracy, readability, brevity, and visual appeal.

In addition, he is expected to provide helpful support to the overall editorial effort of the magazine.

OVERALL RATING: 2.2 **OVERALL SCORE: 220.0**

Employee's Comments:

SIGNATURES:

Employee:.....Date:.....

Appraiser:.....Date:.....

Both the appraiser and the employee must sign and date the form. The employee's signature does not necessarily represent agreement with the review but that he/she has seen the form and participated in the performance appraisal.

H.R. Review:.....Date:.....

AMERICAN INSTITUTE OF PHYSICS

AMERICAN INSTITUTE OF PHYSICS
PAYROLL AUTHORIZATION FORM B

Name: Schmidt, Jeffrey Business Unit: Physics Today
Social Security Number: [redacted]

REMARKS: ANNUAL

SALARY CHANGE INFORMATION:

Position Title	Grade	Range	Effective Date	Next Rev. Date
Sr Associate Editor	50000 66412.5 82825 E08-99		9/1/99	9/1/2000

Previous Salary	Amount of Increase	New Salary	Percent of Increase	Rating
66499.94	1350.00	67,850.00	2%	3.0

Quartile	Amount of Previous Increase	Previous % Increase	Last years Rating
3	0	0	3 rating

TITLE CHANGE INFORMATION:

FROM
POSITION TITLE: Sr Associate Editor
Current Grade: E08-99
Effective date of change: _____

TO:
POSITION TITLE; _____
New Grade: _____
New Grade Range: _____

TRANSFER OF BUSINESS UNIT:

Business Unit: Physics Today New Business Unit: _____

Effective date of change: _____

SIGNATURES:

Steve Benka
Recommending Party
Date: 8/19/99

Authorization
Date: _____

Human Resource
Date: _____

PAF CREATED BY:

jpw

D00500

19 August 1999

To: Stephen Benka, Editor, Physics Today, American Institute of Physics

From: Jeff Schmidt, Senior Associate Editor, Physics Today

Subject: My 1999 performance review (dated 13 August 1999 and signed by you on 17 August 1999)

I was disappointed to find that you wrote my 1999 performance review in the same punitive spirit as my 1998 review. Like my 1998 review, the present review understates or completely leaves out my accomplishments and does not mention the praise that I have received for my work. At the same time, it contrives deficiencies and plays them up. I had thought you had gotten beyond that.

I was also surprised to see that you used an unchanged version of my 1998 review as a starting point for the 1999 review, thereby compounding many serious errors. As you know, in my memo of 27 April 1998 I brought to AIP's attention a number of serious errors in my 1998 performance review — places where statements in the review conflict with the (still existing) written record. AIP did not find fault with any of my corrections, yet you have proceeded as if they had never been brought to AIP's attention.

Hence, not perceiving a genuine interest in accuracy in these matters, let alone fairness, I will not detail here the many serious errors of fact in the 1999 review and the obvious reasons for those errors. I will just make the general statement (and give a few examples) that the 1999 review stands in conflict with the written record as much as the 1998 review did — and for the same reasons, which are detailed in my memo of 27 April 1998. The 1999 review appears to be an extension of the 1998 review: It continues the step-by-step lowering of my appraisal from above average to average to below average, even though the quality and quantity of my work remains as high as ever. Here are the examples:

1. The 1999 review states that I edited 13.5 articles for the Physics Today issues of March 1998 – September 1999. In fact I edited the equivalent of at least 17 articles for those issues: Goldstein, Sullivan, Barth, another article by Goldstein, Ramaty, De Kee, Busch-Vishniac, Hemley, Segev, Bering, Canfield, Vogel, Ertl, Redish, Bernholc and work for the May 1998 special issue amounting to the equivalent of at least two articles. The huge amount of extra work that I did for that special issue was clear to you and to everyone else at the time. I worked day and night to meet the deadline, and you even gave me the AIP "Pat on the Back" award for my "extra effort" and "outstanding performance." (See the attached pages for a copy of the award.) But my 1999 performance review rewrites history to re-estimate the amount of work that I did as the equivalent of editing one-half of an article.

I always work ahead, of course, as magazine work requires, and so I have edited an 18th article (by Clifford Will) during the stated review period (February 1998 – August 1999). However, this article will not be published in the issues counted for my 1999 review (March 1998 – September 1999), and so should not be counted for that review, even though I did the work during that period. Except for my 1998 review, that is how the accounting has been done

on my performance reviews for 17 years, and that is how it should continue to be done unless it is changed by mutual agreement, before the work is done. It is unfair for you to change the accounting method at the end of the review period while you are writing the review, as you did in my 1998 review (see page 4 of my memo of 27 April 1998) and as you did again in my 1999 review, when you reverted back to the long-standing method. Each of these self-serving changes reduced the number of articles credited to me on my 1999 review. The consistent and fair bottom line for my 1999 review is 17 articles, not 18 — and certainly not "13.5."

2. Similarly, it is unfair for you to change my job description after I have done the work. Since 25 August 1997 my three areas of work have been weighted at 70%, 25% and 5% (see your written statement of 25 August 1997, a copy of which is in the addenda of my memo of 27 April 1998.) You altered those percentages while you were writing my 1999 review to 80%, 15% and 5%, lowering my rating. I am particularly surprised that you did that, because I thought you had promised a more above-board management style after I objected to an earlier (19 August 1997), similar action on your part. (For a description of that action, see page 3 of my memo of 2 September 1997, a copy of which is in the addenda of my memo of 27 April 1998.)

3. Your description of the way the work on the May 1998 special issue was organized is incorrect. The editors were told to excerpt "the best of Physics Today" for that issue, and in the decade assigned to me and my partner, that material happened to center on political issues. The staff was not, in fact, required to divide the work along "physics" and "political" lines as you suggest. One pair of staff members, for example, simply divided their decade in half, with each person excerpting the best material from a five-year period. Contrary to what the review says, I did not rebuff or work less than respectfully and collegially with other staff members. In fact, I implemented my partner's suggestions, making major changes in the 8-page section to do so. My partner did not quit as you claim. Your characterization of my work with my partner is an incorrect speculation, a self-serving assumption about what might have happened. If you doubt the accuracy of anything that I have said in this paragraph, you need only ask the staff members to whom I have referred.

4. Contrary to your assertion, I did give you my response to my 1998 performance review. I did so verbally and we discussed it at length. You then consulted with Charles Harris about my request to correct errors in the review, and you refused to do so. I then appealed to Theresa Braun, AIP Director of Human Resources, and James Stith, AIP Director of Physics Programs. Contrary to your claim, there was nothing surreptitious about my not directing that appeal to you or about the fact that others may have seen my appeal. I had already made the appeal to you and had already discussed the issues with you.

These are just a few of the many inaccuracies in my 1999 performance review. They add to the evidently yet-uncorrected inaccuracies in my 1998 review, which should be made to conform to the written record promptly.

Finally, it is discouraging to see that it "seems" to you that I have acted to worsen the staff's morale problems, lower-than-desired respect for management and deficient cohesiveness. This speculation is way off the mark and suggests that you are looking in the wrong place to solve these very serious problems, to the detriment of the staff and the physics community.

We appreciate your outstanding performance.

Steve ceh

AMERICAN INSTITUTE OF PHYSICS

INTER - OFFICE MEMORANDUM

May 21, 1998

I, Jeffrey Schmidt, hereby acknowledge receipt of a cash "Pat on the Back" award in the amount of $100. I understand that my year-end pay will reflect a "gross up" of this award.

J. Schmidt 23 May 98

Jeffrey Schmidt DATE

Thanks

for your extra effort...

"Personally Yours"

D00505

From: Stephen Benka
To: Jeff Schmidt
Date: Thu, Aug 19, 1999 7:09 PM
Subject: First thoughts on your response to the review

Jeff,

Because you didn't have time to discuss your response to your review when you gave it to me, here are my initial thoughts on the inaccuracies that you perceive. Let's discuss this further as soon as possible.

Your example #1: You neglected to mention that, initially, you had wanted to count Goldstein as one long article, not two. However, because you had completed Goldstein within the previous review cycle, and because you were two full articles short of your already reduced (because of your cancelled paternity leave) production goal for last year, we counted them as two and included them in that cycle. This ensured that you would receive an "acceptable" rating, which was clearly in your best interest.

Each editor who worked on decadal excerpts for the anniversary issue did the equivalent of one full article's work in his or her decade. There would be no reason to count yours otherwise, except that your work on your decade had to be largely redone by someone else.

As of today, to my knowledge, the Will article is not yet completed. If it were, I would count it as an article completed within this review period.

Your example #2: You are right that I should have discussed the change of weights with you. I apologize for not having done so. Let's discuss and agree on your job description as soon as possible.

Your example #3: My description is accurate.

Your example #4: Your appeal to Charles Harris, Theresa Braun, and James Stith was the proper procedure to follow. However, as we discussed earlier today (and at other times), your surreptitious circulation of your response to the staff was entirely inappropriate.

I still would like you to tell me which member or members of the staff you have discussed this year's review with.

--Steve

8/19/99
3:30pm Jeff and I discussed his performance review. We changed the "overall rating" to 3.0 and deleted "still" at his request. We agreed that, on page 2, where I wrote "seems to" I had really meant "seems intended to" — but he didn't want me to change it.

He has already discussed his review with another staff member. He'll ask permission to tell me who — if that staff member doesn't give permission, he won't tell me.

He finds the review very negative, not focussing at all on the positive.

I told him that I hope it's the last such review I ever write, that next year's will be much better. I made it very clear that he is capable of contributing constructively and that he needs to do so. ~~Any destructive behavior~~ I wanted last year to be the very end of his destructive behavior.

He said he will write a response.

3. A "diffuse" angle, and

4. An electric generator.

In the process of working with the decathlon team, I and a number of the students and postdocs at the University of Chicago learned how much a little contact with professional scientists means to the kids and the teachers. It made a big difference to them to learn that there are *not* three kinds of light, and that it was the questions that were stupid, not them. Equally important, I think, was getting to meet a working scientist. On the first visit, I brought along a physics undergraduate who had also competed in the decathlon during high school. She talked to the girls at length, telling them that women can and do go to college and major in science and pursue scientific careers.

There is a pervasive attitude in the physics community that there is little we can do to improve math and science education in large urban schools. But we now have solid numbers from TAMS showing that there are methods to change how math and science are taught that work on the scale of the 400 000 students in the Chicago Public School System. And it's my experience that physicists *can* help. If every graduate student, postdoc, and faculty member made regular visits to local schools, we could have a big impact with a rather small investment of time. Helping to build the kids' confidence in their own common sense and intelligence in the face of

Jeff told me that "many" of the staff discuss their reviews with each other. He further said that I shouldn't be surprised about it. To him (and others) on the staff, "confidentiality" applies to me but not to them.

He thought the 3.5 for "Taking responsibility for assigned articles" was stingy. It was the same as last year. He said "he did as well" at this as others on the staff, who got higher scores, and he named Charles Day.

[Roughly a half-hour after I wrote the above notes, Jeff handed me the signed review with a 2-page response and 3 pages of attachments. I showed him the note about prorating his salary increase, and he agreed that it was accurate and thanked me. (I forgot to mention in the above notes that we had agreed that I would include such a note with his review.]

science; high school is important, but cannot succeed if the elementary schools fail.

Keeping kids from being done in as they grow older is much harder. It's not a question of curriculum alone (although having a curriculum teachers are comfortable with is essential). A critical problem is the occasional bad teacher. Kids are proud, and, from watching my own, I know they won't play a game in which they're set up to lose. One year of a teacher who is on a kid's case can be enough to undo the work of many good teachers. To ensure good math and science education, we need to re-educate those teachers who attack a curious kid's self-esteem, so that they instead encourage curiosity and risk-taking.

What science *is* is a mystery to most teachers. In Chicago, there are 17 000 teachers who teach math and science on a regular (at least weekly) basis, but they aren't specialists. The emphasis is on memorizing names; science is seen more as a body of knowledge than as a mix of curiosity and method. Teachers consequently avoid it, and their uncertainty is transmitted to the kids. But as some innovative programs have shown, quantitative work mixed with curiosity-driven questions can really turn kids on.

Now back to those decathlon questions. Since you'll never figure out the answers on your own, here are the answers from the workbook:

1. Neon, fluorescent, and incandescent

2. A discharge

1/30/99

Last Thursday, 8/26/99, Jeff and I talked about his review. He spoke at length about why he wouldn't divulge the identity of ~~Bass~~ who he had discussed his review with. He said "they" didn't want to be involved. Jeff made it clear that he would tell me "in his words, not theirs" about it. He spoke of my "investigation", a "witch hunt", "fear of reprisals", and other things that he has spoken of before. In my view, he was putting his "spin" on events, and was to be taken with great skepticism. I let him talk, then turned the subject to his review.

I brought up a topic we'd discussed, but that wasn't in his 2-page response: his claim that he "takes responsibility for articles" as ~~good~~ well as anyone else on the staff. I pointed that I received 2 complaints from authors (Dekee and Hemley) that they hadn't received guidance for their revisions in this period— and they were both his authors. I had forwarded the gist of both complaints to Jeff at the time.

I gave him a list of his articles since Jan '97. We agreed that ~~the~~ only "published" articles will count in any review period from now on and that [illegible]

D00511

a utopian vision of what the world could be like. I've thought that science could be the basis for a better world, and that's what I've been trying to do all these years."

A second memorial for Brown was conducted two days later in the rococo rotunda of the US Capitol. On this occasion, with some 500 guests attending, an Army string quartet performed Bach's *Brandenburg Quartets* and Copland's *Variations on a Shaker Melody*, and House Speaker Dennis Hastert of Illinois , Minority Leader Richard Gephardt of Missouri, friends, and family members reminisced about Brown's life and and accomplishments. One of the speakers was Brown's widow, Marta, who has entered a Democratic primary to be held this month for a chance to run for his seat in California's 42nd Congressional District. She said "George believed that public service was a noble calling, that an individual could make a difference, and that through persuasion and reason we could build a better society. Media advisers, sound-bites, and political polling were never used to set his positions. George consulted his knowledge of history, the details of the issue, and his conscience in setting his own course. His approach to campaigning was to be as candid as possible and rely on the good judgment of the people. This style served him well through every election since 1962, despite repeated foprecasts of his impending political demise."

in the next review period.

He said he prefers this method of counting, though "there are problems with both methods." [counting articles worked on, or articles published] He wants the Will article to go into his next review.

I said I would ask him to look at his job description on Monday (today).

5pm Just now, Jeff came in with notes for me about his colleagues' comments. I had told him last week that would be helpful for me.

He initialed (and I signed) his job description. He thought it was fine.

He gave me an update on Siegel (out of the country until Labor Day; can then complete article in 10 days).

He foresaw no problem completing both Bloomfield & Leiffer for November, though neither revision has arrived yet.

He volunteered for the Berg article for January, in response to my email request to him, Chas, Bert, & I. I told him

As an advocate for space exploration and environmental protection, he challenged scientists and policymakers alike to consider the unanticipated consequences that future generations would face. As a champion of basic research and science education, Mr. Brown reminded us that all citizens of all ages expect, and deserve, a return on government investments. . . . In a lecture last year [to a science group], he said, 'Given that we can completely transform the world with our knowledge, we are morally compelled to answer the question, What is the end that we seek?' "

A memorial service held on 28 July in the Los Angeles suburb of Monterey Park, where Brown was mayor in 1955–1958,was attended by some 1100, including the congressional leaders of both parties, House Science Committee members and staff, NASA Administrator Dan Goldin, Agriculture Secretary Dan Glickman, and President Clinton's science adviser, Neal Lane. In his remarks, Lane characterized Brown's quintessential quality—"his ability to thrive in two separate worlds at the same time: a rough-and-tumble world of politics and two-year election cycles and a more quiet and contemplative world devoted to thoughtful analysis of the long term progress of science and society." Lane concluded his remembrance by quoting from a recent interview in which Brown said, "From my earliest days, I was fascinated by

30 August 1999

Steve --

Here are the notes that you requested. They outline the responses that I got when I asked colleagues who saw my annual review for permission to fulfill your request that I report their names to you. As you know, I did not want to give you this written report, but you insisted that I do so. I can only hope that you will use it to address staff concerns and not "kill the messenger."

Four themes were apparent in the responses from my coworkers.

1. They consider me to be a supportive and valuable colleague, and they want you to behave in accord with that view. They note that the long-standing staff morale problems did not originate with my review appeal.

2. Their anxiety was exacerbated by the fact that you were not open about your reasons for wanting their names. (Later, when I asked you specifically why you wanted their names, you refused to answer.) Thus the only thing they imagined coming from your investigation was punishment, of me or of them. They think they would be subject to guilt by association, because you have been so harsh with me.

3. They feel that their conversations were private and that to reveal them would be an invasion of their privacy. They made reference to the First Amendment, the spirit of which they evidently carry with them.

4. They agree with you that annual reviews are confidential, but they see that as a restriction on management, not on them. Thus they feel free to discuss their reviews, and many do. They think it would set a bad precedent if any of us were punished for that.

Please let me know if I can be of further assistance.

Jeff

Job Description

August 30, 1999

Name: Jeff Schmidt
Title: Senior Associate Editor
Reports to: Editor, Physics Today

BRIEF DESCRIPTION OF JOB DUTIES: Take responsibility for and edit feature articles.

ESSENTIAL FUNCTIONS:

1. Edit feature articles in conjunction with authors, to be consistent with the magazine's standards of readability, accuracy, brevity, and visual appeal. Also includes: negotiate for artwork; monitor articles through production to publication. Weight, 80%

2. Take responsibility for assigned articles, in consultation with the editor. Includes: Obtain solicited manuscripts; review articles; obtain outside reviews; develop strategy for article revision and convey it to the author; obtain revised articles. Weight, 15%

3. Perform other editorial functions as needed. Includes: Review potential feature articles, letters to the editor, and other editorial matter as requested; provide editorial support through staff discussions; attend staff meetings. Weight, 5%

QUALIFICATIONS: Graduate level training in physics or other physical science; several years' experience in editing or writing for a scientific or technical magazine; ability to meet deadlines; ability to work well with others, both inside and outside the magazine.

Steve Benka
8/30/99

30 Aug. 99

From: Jonathan Goodwin
To: Benka, Stephen, Stith, Dr. James
Date: Fri, Sep 3, 1999 5:02 PM
Subject: Jeff Schmidt

Hi folks - I have spoken with Jeff again - he got my message relative to the numbers I had come up with earlier and disagreed with the percentages I had used. He also went on to discuss some other points that he had a problem with - to very briefly outline them -

1) He feels the percentages (weights) should be those assigned in Aug 97 ->70,25,5, as opposed to the ones I used, which were from his last review (76, 19, 5). For the record, these older percentages would increase his rating to 2.875.

2) He feels that the review period stretched out over 18 months was an option that misled him. I believe he is realizing that he could have received some increase at the one-year point, not 18 months, and although he admits he had the option, he seems convinced that there is some fault of Steve's that led him to make the wrong decision. Terri points out that for a 6-month review, we would pro-rate the increase anyway.

3) I also sensed that he was hoping that even a slight increase in rating would give him a slightly higher merit increase. I explained that this is a guideline for the manager, not an exact percentage of the merit matrix cell.

I get the feeling he is attempting to have me act as a back door way of changing everything on the review. After speaking with Terri, it seems like one or both of you will need to discuss Jeff's issues with his review further and come to some conclusions, at which point no further changes will be made.

Thanks very much! Please let me know if you need any additional clarification.

Jonathan

CC: Braun, Terri

From: Stephen Benka
To: Dr. James Stith, Jonathan Goodwin
Date: Tue, Sep 7, 1999 9:34 AM
Subject: Re: Jeff Schmidt

Jeff and I are planning to discuss any issues that he still has tomorrow, Wednesday. --Steve

>>> Jonathan Goodwin 09/03 5:02 PM >>>
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Thanks very much! Please let me know if you need any additional clarification.

Jonathan

CC: Terri Braun

From: Jonathan Goodwin
To: Benka, Stephen, Stith, Dr. James
Date: Fri, Sep 3, 1999 5:02 PM
Subject: Jeff Schmidt

Hi folks - I have spoken with Jeff again - he got my message relative to the numbers I had come up with earlier and disagreed with the percentages I had used. He also went on to discuss some other points that he had a problem with - to very briefly outline them -

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Thanks very much! Please let me know if you need any additional clarification.

Jonathan

CC: Braun, Terri

9/3/99 Jonathan Goodwin called from H.R.
1am

Jeff and he discussed putting the Wild article into his file, with various and sundry notes attached. Fine.

Jeff went on to say that I had admitted making a mistake on the weightings for his review, citing my email to him.

Jonathan read the email, concluded (correctly) that I had apologized to Jeff for not discussing the change with him, not for having made the change. Jonathan conveyed that conclusion to Jeff 3 times, but Jeff wouldn't let it go.

Finally, Jonathan told Jeff ~~that~~ to approach me about it, or that I would approach him. Jeff then quickly backed off, saying in effect that he didn't want me to know of their discussion, or at least that he didn't want to discuss it with me.

I thanked Jonathan, and explained that I thought this was a clear example of Jeff manufacturing an issue where none doesn't exist. At this point

majordomo@majordomo.umd.edu with message body (not subject)
subscribe phys-colloquia-ext
or
unsubscribe phys-colloquia-ext

D00520A

9/3/99
11:40 am

I called Jeff, told him about Jonathan's call. We agreed that, next Wed. when he comes in, we'll discuss it further. At the very least I want his account of his conv. w/ Jonathan.

I said it seemed he still has "issues" and that, despite my invitation to him (in the email) to discuss them w/ me, he prefers to bring those issues up elsewhere.

He said Jonathan had called him about something else entirely, and that this subject came up only in passing. He said that he and I had already discussed "all of that" and that we didn't agree. I replied that we hadn't discussed my email to him, yet he was trying to use that email, with his own "spin", to accuse me of wrongdoing. I did not see that as a productive course of action.

He has no desire to discuss any of this with me.

Republican leaders know that if they spread cuts around to all the spending bills, few would ever be passed, let alone signed into law. So they have kept the cuts to a minimum in most of the bills, and to pay for financing these, they have raided others that are dear to the hearts and minds of many members of Congress, even in their own party—the bills that pay for science, space, health, social services, and education. The bill that funds the Labor and Health and Human Services department has been delayed becvause a preliminary House version is $18.2 billion below Clinton's request, a shortfall that would require a 32% across-the-board reduction in programs.

Just two weeks after NASA officials celebrated the 30th anniversary of the "giant leap for mankind" on the Moon and the launching of the Chandra x-ray telescope, the House Veterans Affairs–Housing and Urban Development (VA–HUD) appropriations subcommittee scooped $1.4 billion, or more than 10%, from NASA's current budget. In doing this, $640 million was torn out of space science, endangering fure missions to Mars and the Space Infrared Telescope Facility (SIRTF), scheduled for launch in 2001.

A few days after the subcommittee's draft, the full House appropriations committee restored $400 million to NASA'sd budget, rerscuing SIRTF and thed Mars missions, but leaving the space agency with a $1 billion cut, or 7% below its

9/3/99
~2pm

Jonathan called me. Jeff had called him to find out "if it's ok for a manager to change the weightings w/o first discussing it w/ the employee." After checking w/ Terri Braun, he told Jeff that a manager can change the weightings at any time, but should tell the employee when making such a change.

I noted that I had already acknowledged (and apologized) to Jeff for not having done that.

We agreed to change his weightings back to those that ~~pertained~~ were used on his 1998 review, which changes his overall score from a 2.8 to a 2.83.

other bills that ignore his priorities. The Republican leadership scoffs at the President's promise.

Confrontations like this have occurred in the past. In 1995, Republicans took the brunt of the blame after a budget impasse led to a government shutdown. Since then, Republicans have lost every veto battle with Clinton over the budget. Unlike the earlier battles, which were fought under the shadow of huge deficits, the federal government is now reaping record financial surpluses. But Washington is still operating under the rules of political austerity.

That is because of the spending ceilings imposed by the 1997 balanced-budget agreeemnt between Clinton and Congress. Now neither wants to be the first to blink. The Republican strategy seems to rely on labeling certain things, like the census, as "emergencies" so that they are not governed by existing budget caps.

Only two of the 13 annual appropriations bills have cleared Congress. These two account for just 2% of the total $1.78 trillion federal budget next year. By comparison, the two largest domestic appropriations bills—funding five Cabinet departments, including DOE, Commerce and the Defense Department, as well as major science and environmental agencies, such as NASA, NSF, and the Environmental Protections Agency—have yet to pass either chamber. They represent well over a quarter of the total for fiscal 2000. The

9/8/99 conv w/ Jeff

2 pm

Salary matrix based on 12 months
Doesn't want to "fall behind" the real increase

Take annual inflation rate, cut in half, add to salary

Could be 2½ month payment of Δ Salary (June 15 – Aug 31)

Take the component of salary increase that's due to inflation, take 1.5 times (for 18 months)

Will accept either way to fix it.

I agreed that he lost $ because of the 6-month delay in his review — the salary would have increased upon his return.

---

a long time ago...
Reimbursement claim — part was denied
The rest has vanished? — check into it

Ranges in matrix do (not) correspond to ranges in score.
Thinks increase in score (by increased (decreased) weights)
Should move up his salary increase w/in the range.
In previous years, salary increase was interpolated.
Would see anything else as punitive

Still sees review as "zealously" negative.

We disagree on the accuracy of the review.
Did not get the tiny amount of credit that he really is due, because we gave him the lowest increase possible in the range.

Score is being raised, so should salary.
"Give credit where credit is due, no matter how tiny that credit might be."

* Wants me "to consider" this.

Wants credit for the 2 Goldstein articles.

Can't do it — I told him

"Good will" is a factor in accounting for articles.

I emphasized that good-will is a 2-way street.

3:20 pm conv. w/ Jonathan: ∄ cost-of-living factor in the salary increases. They are merit-based only. He told that to Jeff several times.
Changes to salary ranges change in response to the market, but not increa

---

I will interpolate the new score (2.875)

PHYSICS TODAY MEMO

TO: Jeff Schmidt
FROM: Steve Benka SB
SUBJECT: Part-time status

DATE: 14 September 1999

CC: James Stith, Terri Braun

You have requested a change in employment status from full-time to part-time. In your part-time capacity, you would perform two-thirds of your workload for *Physics Today.* You would complete 12 rather than 18 articles per year and be paid two-thirds of your full-time salary. Per AIP's HR policies, as a regular part-time employee working at least 25 hours per week, you will keep all of your employee benefits.

This arrangement is subject to periodic review; your status can be changed back to full-time, should management determine that your part-time status has an adverse impact on the magazine.

Your part-time status is effective as of 20 September 1999.

Approved:

9/17/99

J. Stith

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Your part-time status is effective as of 20 September 1999.

Approved:

_____

J. Stith

PHYSICS TODAY MEMO

TO: Jeff Schmidt
FROM: Steve Benka
SUBJECT: Part-time status

DATE: 14 September 1999

CC: James Stith, Terri Braun

At your request, you will become a part-time, rather than full-time employee of AIP, performing two-thirds of your workload for *Physics Today* (that is, completing 12 rather than 18 articles per year), and receiving two-thirds of your full-time salary. You will keep all of your employee benefits.

Your part-time status is effective as of 20 September 1999.

It is understood that this arrangement can be rescinded, should the Editor deem it to have an adverse impact on the magazine. No such adverse is foreseen at this time.

impact

From: Jeff Schmidt
To: i:tbraun@aip.org
Date: Wed, Nov 10, 1999 12:55 AM
Subject: Vacation carryover

Dear Terri --

My vacation balance is more than the amount that one can routinely carry over to the next year. I am writing to you for permission to either use the "excess" vacation time before the end of 1999 or carry it over to next year.

Using it before the end of 1999 might be a problem, because to do so I would have to begin the vacation fairly soon (sometime this month) and let it run through the end of the year. That would interfere with my work at the magazine. But I would rather use the vacation time before the end of the year than lose it (or add it to my sick-bank balance, which already exceeds one thousand hours). My preference is to use a bit of the vacation time this year and carry the rest over to next year. I could plan to use the excess during the first half (or first third) of next year, if that would help.

Alice Gersh and I discussed the predicament, and I brought it to Steve Benka's attention. Thank you for your attention to the matter.

-- Jeff Schmidt

CC: SBENKA, AGERSH, i:JSCHMIDT@aip.org

the Trinity test site in the New Mexico desert. More importantly, Morrison had helped evaluate German intelligence for Groves and so, in Stone's view, would have known that German scientists were getting nowhere with their bomb project. Chikov had written that Perseus had said when he was recruited that Manhattan Project scientists had been tricked into working on the bomb when Groves and others knew the Nazis were lagging far behind. This may have been the motive for Morrison's actions, Stone thought.

Bearing a hunch that Morrison was Pers, Stone called on Morrison several times in 1994, never accusing him of spying, but to sound him out about Chikov's account and suggesting that those who participated in wartime espionage should now come forward and explain their motives for the sake of history. It became clear to Morrison and his wife what Stone was hinting and led, Morrison said in a telephone interview, to "five years of estrangement."

Chapter 29 in Stone's book surprised Morrison nevertheless. "I was incredulous and distressed," said Morrison.

His written response to the chapter was circulated to FAS officers and others. In it, Morrison discusses the "obvious discrepancies" between Perseus as described by Chikov and his own life. Chikov stated that Perseus was recruited by the KGB during a visit to his ailing parents

From: Jim Stith
To: Benka, Stephen
Date: Thu, Nov 18, 1999 12:46 PM
Subject: Fwd: Jeff Schmidt's vacation problem

Steve,

Re the note attached below concerning Jeff Schmidt's "vacation problem". Are you aware of any issues along this line that were discussed, taken into account when Jeff made the request for unpaid leave?

I am in Melville but may be reached by e-mail.

Jim

James H. Stith
Director of Physics Programs
American Institute of Physics
College Park, MD 20740
301 209 3126 (W)
301 209 0841 (Fax)

CC: Nanna, Randy

From: Alice Gersh
To: Terri Braun
Date: Tue, Nov 16, 1999 10:54 AM
Subject: Jeff Schmidt's vacation problem

Terri,
I got to thinking about this, and I wondered how Jeff Schmidt could have come to this situation (i.e., having too much vacation time) when he had just been out without pay for 6 months.

So I looked at the recently-approved policy on Leave of Absence Without Pay (HR Policy # 315.07 in the Policies & Procedures Manual)... and it clearly states that "all accrued vacation time must be used before unpaid leave begins."

So he should have done that, and perhaps we can backtrack and give him pay for as much vacation time as he had back at the beginning of his leave. This way he wouldn't lose any time and we wouldn't have to give him special permission to carry over extra days.

Alice

SB
6/11/99

hout a Spy To the victim of the bizarre accusation it was "astonishing." Chapter 29, the next to the last one, of a personal memoir, *"Every Man Should Try": Adventures of a Public Interest Activist* (Public Affairs), by Jeremy J. Stone, president of the Federation of American Scientists (FAS) for the past 30 years, centers on a figure referred to only as Scientist X. Stone purports in his book that X had been recruited by the KGB to pass information to Soviet agents on the design and construction of the atomic bombs then under development at Los Alamos. Though X isn't named in the chapter, Stone drops several hints and details that enabled some scientists and scholars associated with FAS to unmask the suspect to reveal one of the nation's most revered physicists, Philip Morrison, university professor emeritus at MIT and a book reviewer for *Scientific American*.

Stone's charge against Morrison is "unsubstantiated" and "unbelievable," contends Priscilla McMillan, a professor at Harvard University's Russian Research Center and FAS secretary. "I was outraged."

Ever since the book was published in April, FAS officers and council members have been discussing by telephone and e-mail how to sustain Morrison's prestige as a true statesman of science

From: Stephen Benka
To: Dr. James Stith, Terri Braun
Date: Thu, Nov 18, 1999 3:38 PM
Subject: Re: Fwd: Jeff Schmidt's vacation problem

Jim, and others,

Jeff's accrued vacation never entered the discussion prior to his taking leave without pay. It hadn't occurred to me and neither Jeff nor anyone else brought it up.

Enforcing AIP's policy seems reasonable to me, but I'm sure you recognize that Jeff probably wouldn't agree. . . .

Related, Paul Elliot just gave a memo, also requesting to carry additional vacation over to next year. It is addressed to Terri "via Steve Benka, Randy Nanna, Jim Stith." I've ok'ed it and put it in Randy's mailbox. It's my hope that the 50% copy editor we are about to hire will absorb enough of Paul's workload that he'll be able to take some time off next year. I'm sure he hopes the same thing.

Now, about my vacation . . . :-)

--Steve

>>> Jim Stith 11/18 12:49 PM >>>
Terri,

I think this is a reasonable solution. I am checking with Steve to see if there were any issues surrounding vacation at the time that Jeff went on leave. I will be in Melville for the next couple of days and out of the office all next week. Will let you know what I find.

Jim

James H. Stith
Director of Physics Programs
American Institute of Physics
College Park, MD 20740
301 209 3126 (W)
301 209 0841 (Fax)

>>> Terri Braun 11/17/99 05:58PM >>>
Jim: What do you think of this suggestion? I will be back on Friday and speak to you then.

Terri

CC: Nanna, Randy

and yet preserve Stone's reputation as a focused and driven activist in many causes. "Jeremy's actions for the FAS have been on a grand world scale," says Frank Von Hippel, a Princeton University physicist who chairs the FAS Fund, the research and education arm of the organization. Stone, son of the crusading independent journalist, I. F. Stone, has championed nuclear disarmament, freedom for Andrei Sakharov, US diplomatic exchanges with the Soviet Union and Peoples Republic of China, and other causes. "The accusation of spying against Phil is Jeremy's grand error of judgment. It's an aberration," says Von Hippel, "and none of us can account for it. In the end, though, Phil is unscathed by this."

Because FAS was founded in 1945 mainly by physicists who had created atomic bombs, Stone was intrigued by a book recounting Soviet espionage activities in the Manhattan Project by Pavel Sudaplatov, a Stalin era spymaster, and Jerold L. Schecter, a former Moscow bureau chief for *Time* magazine and his wife, Leona. Sudaplatov claimed in his book, *Special Tasks* (Little, Brown, 1944), that he had "set up a network of illegals who convinced Robert Oppenheimer, Enrico Fermi, Leo Szilard, Bruno Pontecorvo, Alan Nunn May, Klaus Fuchs, and other scientists in America and Great Britain to share atomic secrets with us." Physicists and historians quickly ridiculed the charge against the

From: Jeff Schmidt
To: Randy Nanna
Date: Tue, Nov 23, 1999 9:31 PM
Subject: Vacation carryover

Randy --

Thank you for talking with me today about my vacation carryover request. Here are the specifics that you wanted: I would like to take 2.2 weeks of vacation next month (6 - 20 December 1999) and carry over to next year whatever vacation balance remains.

In our discussion I forgot that vacation accounting is no longer done in days. It is done in hours. So predicting the remaining vacation balance would be complicated, but I am sure it will exceed the usual limit.

-- Jeff

CC: Jeff Schmidt, Stephen Benka

first three on the list, though by mingling their names with Pontecorvo, Nunn May and Fuchs, Sudaplatov made it appear that all were passing bomb data to the Soviet Union. (See Physics Today, June 1994, page 59.) Soon after the book was published, Morrison, it so happened, made a careful analysis of Sudaplatov's sources. Morrison concluded that it was most likely that the Soviet's principal mole was an experienced agent with contacts among Met Lab employees in Chicago, but not a knowledgeable physicist. The documents dated 1944 were filled with false trails and offbeat ideas, Morrison found, but those in 1945 were much more accurate though mainly nontechnical.

Later in 1994, the National Security Agency began releasing transcripts of Soviet intelligence messages that were intercepted during and after World War II. The transcripts, known by the code name of Venona, referred to agents and moles by cover names such as Pers, Mlad, Huron, Quantum, and Volok. Mlad has since been identified as Theodore Hall, an American physicist at Los Alamos, who was recruited by the Soviets when he was 19 and moved to Britain when he believed he might be prosecuted. Huron is suspected to have been Ponteorvo, who worked with Fermi in Rome and Los Alamos, defected to the Soviet Union in 1950 and died in 1993.

Stone found an account of a mole named Perseus (who is thought to be Pers, possibly a

PHYSICS TODAY MEMO

TO: Jeff Schmidt
FROM: Steve Benka SB
SUBJECT: Vacation time

DATE: December 10, 1999

In Randy's absence, he has asked me to send this memo.

You are free to take as much vacation between now and the end of 1999 as your workload for the January and February issues allows.

Your two articles for January are finished. You have no articles scheduled for February. Please let me know your schedule as soon as possible.

Randy and I have been working on the issue of your excess leave, but an answer is still not imminent. We hope to know by the end of next week.

CC: Randy Nanna

From: Jeff Schmidt
To: SBENKA
Date: Mon, Dec 13, 1999 12:42 AM
Subject: Vacation

Steve --

Thank you for your 10 December memo concerning vacation time. I am sure you know that it is generally not possible to plan effective use of vacation time on short notice. But I started planning as soon as I got your memo, and I am doing my best to see how much vacation time I can make plans to use effectively this month.

So far, I am planning to be on vacation for the next six working days (13 - 20 December). I plan to be in the office on 21 December to work and to attend the AIP holiday party (which I committed to attend with coworkers before I got your memo). After the 21st it would probably be best for me to work some days and take vacation other days, but I won't be able to make specific plans until after the end of this week, when I get the answer to my 10 November vacation request.

-- Jeff

CC: manna, AGERSH, JSCHMIDT

From: Jeff Schmidt
To: RNANNA
Date: Thu, Mar 16, 2000 4:06 AM
Subject: The number that you asked for

Randy --

Thank you for discussing with me yesterday my 10 November 1999 vacation request. A few hours after our meeting, Steve Benka issued a memo to the Physics Today staff in which he described vacation time as "well-earned" and "richly deserved." I can assure you that the staff agrees with that characterization. Do you feel that your attitude during our discussion conveyed the same understanding?

Here is the number that you asked for: According to my records, at the end of 1999 I was due 186.61 hours of vacation time beyond the amount that is automatically carried over.

Let me take this opportunity to thank you for agreeing with me that an employee should either be allowed to use vacation time or carry it over to the next year. I hope you will uphold that principle in my case. As you and I know, you very recently set precedent for doing that.

Jeff

CC: TBRAUN, SBENKA, JSCHMIDT

From: Randy Nanna
To: Schmidt, Jeff
Date: Thu, Mar 16, 2000 9:51 AM
Subject: Re: The number that you asked for

Jeff,

You're welcome. Will you be in today?

Randy

>>> Jeff Schmidt 03/16 4:06 AM >>>
Randy --

Thank you for discussing with me yesterday my 10 November 1999 vacation request. A few hours after our meeting, Steve Benka issued a memo to the Physics Today staff in which he described vacation time as "well-earned" and "richly deserved." I can assure you that the staff agrees with that characterization. Do you feel that your attitude during our discussion conveyed the same understanding?

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Jeff

CC: Benka, Stephen; Braun, Terri

up in the gutter," said Ehlers.

After another hour of acrimonious debate, Costello's amendment filed on a 17–17 vote, and the committee recessed for lunch. During the 80 minute break, Representative Bart Gordon, a Democrat of Tennessee, worked with the staffs of both parties to draft a compromise plan that included $100 million for construction once DOE met all of Sensenbrenner's conditions and offsetting reductions in other programs. The new amendment passed, 28–0. After announcing the outcome, Sensenbrenner joked: "The Secretary of Energy just called 911 and is waiting for the paramedics to resuscitate him." But the Secretary should know that DOE will get no funds to build the SNS "until he certifiies in writing to our committee and to the comparable committee in the Senate that the senior project management positions have been filled by qualified individuals" and that a cost baseline and spending milestones have been reviewed by an independent body "outside the department and without any financial interest in the project. . . . And that Mr. Moncton achieves his authority from the secretary himself rather than anybody else in the department, including the director of Oak Ridge."

On 27 May, the Senate Appropriations Committee approved $187 million for the project, $27 million short of DOE's request, but significantly higher than the House Science Committee's figure. Ernie Moniz, DOE's unmder

1/15/00

Nov. memo

Wanted to either use it all or carry it all over.

S: We'll take ½ responsibility for AIP's mistake, put ½ the responsibility on the victim

Randy didn't get answer fr. AIP management, went to bat for Jeff to get 10 days.

Unhappy, unfair, don't agree — So what? This is what it is.

Sabbatical — Vacation accrual

Jeff would have his vacation charged against his sabbatical retroactively.

Unfair w.r.t. Paul's treatment

From: Randy Nanna
To: Schmidt, Jeff
Date: Tue, Apr 11, 2000 7:38 PM
Subject: Re: Vacation carryover numbers

Dear Jeff,

HR has rechecked the vacation hours and the numbers are correct. If you have a question about them, please see Linda Dombrowski.

The original plan outlined to you remains in place.

Randy

Randolph A. Nanna
Publisher, Physics Today and The IndustrialPhysicist
Phone: 301.209.3102
Fax: 301.209.0842
email: rnanna@aip.org

>>> Jeff Schmidt 04/06 5:44 AM >>>
Randy --

At our meeting yesterday you agreed with me once again that my 10 November 1999 request to be allowed to either use my "excess" vacation time or carry it over to 2000 was reasonable. You indicated further that last year I was wrongly prevented from using my vacation time (by management's failure to respond to my repeated requests until 10 December 1999).

Logically, then, one would expect you to allow me to carry over the vacation time. However, you said that you would allow me to carry over only half of the vacation time that I lost as a result of your mistake. You described this as a "compromise." I then asked (and have yet to receive a real answer) why I should be forced to suffer half the consequences of your mistake.

I also asked you to be fair -- that is, to treat me in the same way that you treat other employees in the same situation, rather than in a discriminatory fashion. I noted, for example, that you are allowing Paul Elliott to carry over all of his "excess" vacation balance from last year. In fact, Paul is using that vacation time right now. As you know, he submitted his vacation request a week after I submitted mine last November.

I have now checked the numbers, and I found two errors in your calculation. First, according to the numbers on my 15 January 2000 earnings statement, the amount of "excess" vacation time at the end of 1999 was 186.61 hours, not twenty 7.5-hour days as I think you assumed.

Second, the amount of vacation time that I was automatically allowed to carry over was abruptly lowered, without any advance warning to me, to 175 hours from 262.5 hours the previous year. I didn't discover this change until I saw my earnings statement of 15 January 2000 -- obviously too late to do anything about it. Evidently, at some point near the end of September 1999, the portion of my vacation balance that I needed to use (or lose) by the end of the year was suddenly increased without my knowledge. The fact that I wasn't told about this deprived me of the knowledge that I needed to use (or lose) a lot more vacation time than I had thought. Because this occurred so late in the year (what if it had occurred on, say, 20 December?), and because it wasn't explained to me, I ask you to please readjust the automatic carryover back to what it was the previous year.

If you did that, then my "excess" vacation balance would be 99.11 hours.

I ask that you please make these corrections.

Jeff

CC: Benka, Stephen; Braun, Terri; Dombroski, Linda

AMERICAN INSTITUTE OF PHYSICS

Inter-Office Memorandum

TO: Jeffrey Schmidt

FROM: Randolph Nanna

DATE: 3 April 2000

RE: Vacation Request

This will outline our position on your request to use extra vacation carried over from 1999:

1. You will be able to use ten (10) days of 1999 vacation in 2000 in addition to your regular vacation allowance. This is a one-time event only. The balance will be credited to your sick bank.

2. We request that you submit a plan to achieve your required editorial materials, in writing, to magazine management in order for you to use the extra ten (10) days.

3. Please allow ample time for your vacation requests as outlined in memo dated 3-15-2000.

4. Any unused vacation in 2000 will be automatically transferred into your sick bank. This assumes you are already at the maximum vacation carry-over. AIP does allow vacation carry-over up to a maximum of 35 days for your term of service.

cc: J. Stith
T. Braun
S. Benka

From: "Johnson, Anthony" <johnsona@ADM.NJIT.EDU>
To: "'jschmidt@aip.org '" <jschmidt@aip.org>
Date: Sat, Apr 8, 2000 5:23 PM
Subject: Physics Today article

Dear Jeff:

I now have the galleys and I am quite impressed with how quickly you put together the two pieces. I am also quite happy with the editing of my submission. I only have one question and suggested minor change. The first paragraph of the article: The number of jobs posted that I received from Ed Goldin, shortly after the OFC conference was 2000. Is it safe to assume that the 3400 number that you are using is the updated number and not a typo? If all is well then this is an even more dramatic sign of opportunity in the field and warrants more accentuation. I suggest italics and an exclamation point for the following: " ... 11 jobs per seeker!"

You've done a wonderful job and I have no further changes or comments. I will be visiting the School of Optics at the University of Central Florida on Monday and Tuesday and if you should need to get hold of me for some reason, my hosts are Professors Eric Van Stryland and George Stegeman. The Administrative Assistant at the School of Optics is Sarah Pimentel (Tel: 407-823-6916).

Best Regards,

Anthony

CC: "'sbenka@aip.org '" <sbenka@aip.org>, "Crawley, Re...

said DOE would most likely find the additional money in other parts of the science program, not particularly in nuclear physics. DOE is asking Congress for $342.9 million for nuclear physics in fiscal 2000, a $8.4 million increase, amounting to 2.5%, over this year. "If DOE is able to get a 10% funding increase for nuclear physics research, that would solve a lot of problems," said Richard Milner, Bates's director.

Richardson's resolve to keep Bates open leaves DOE officials scrambling to find the money without damaging the rest of the nuclear physics program. The decision to close Bates was based on a report last September by a panel of the Nuclear Science Advisory Commttee (NSAC), operated jointly by DOE and the National Science Foundation. Under the constraints imposed by a flat or nearly flat budget scenario in fiscal 2000, the panel warned, DOE would have no other choice than to support the highest priorities in the field of intermediate-energy nuclear physics—namely, the Continuous Electron Beam Accelerator Facility at the Thomas Jefferson Laboratory in Norfolk, Virginia, and the Relativistic Heavy Ion Collider at Brookhaven National Laboratory on Long Island, New York—and to scuttle the Bates lab.

The panel's conclusion followed the recommendations of NSAC's 1996 Long Range Plan, which called for "vigorous pursuit of the scientific opportunities provided by the nation's

From: "Johnson, Anthony" <johnsona@ADM.NJIT.EDU>
To: "'Jeff Schmidt '" <jschmidt@aip.org>
Date: Sun, Apr 9, 2000 3:03 PM
Subject: RE: Physics Today article -Reply

Dear Jeff:

Yes, of course leave the sentence as it stands -- I nearly forgot about the conservative nature of Physics Today. I really had my doubts about getting this done in time for the May issue, but you pulled it off!

Best regards

Anthony

-----Original Message-----
From: Jeff Schmidt
To: johnsona@ADM.NJIT.EDU
Cc: jschmidt@aip.org
Sent: 4/9/00 5:38 AM
Subject: Physics Today article -Reply

Dear Anthony:

Thanks for the quick turn-around on the page proofs. We will probably send the article to the printer while you are in Florida.

Yes, 3400 is the updated number. The Physics Today style is rather low-key, and so we try to avoid using italics for emphasis unless it is necessary for clarity. And we try not to use exclamation points for emphasis; we reserve them for actual exclamations, such as "Hmmm!" The paragraph containing the sentence in question already has an exclamation point (in the first line). I think the dash adds just the right amount of emphasis. The significance of "11 jobs per seeker" isn't going to be lost on any of our readers. So I would like to let the sentence stand as it is. Would that be ok?

Thank you again for an interesting and lively article.

Jeff

CC: "'sbenka@aip.org '" <sbenka@aip.org>, "Crawley, Re...

keep it running next year while its new detector, the Bates Large Acceptance Spectrometer Toroid (BLAST), is completed by an international collaboration of about 50 physicists and that the center would continue to operate until 2004 or 2005. "I thought I had a commitment from Martha," said Birgneau.

But when DOE's budget was released on 1 February, Birgeneau learned for the first time of Bates's death sentence. "I considered it my job to tell people the grim news," he recalled, "and I thought I should wear dour clothes for a somber occasion." But before he met with the scientists and staff, MIT President Charles Vest called to say that Richardson had just phoned him to explain that DOE had made a mistake. In a month or two, Richardson told Vest, the department would amend its budget request for Bates. "Now the news was joyous," Birgeneau noted, "so I wore a pink shirt and a bright tie when I went to the lab."

President Clinton's budget proposes that funding for Bates's basic research into the structure of the atomic nucleus would drop from $10.8 million this year to $2.5 million in fiscal 2000, which begins on 1 October. The budget calls for decommissioning the accelerator lab, but Krebs told a House science subcommittee on 3 March that DOE is seeking approval from the White House Office of Management and Budget to add $7.5 million to its request for Bates. Krebs

From: Jeff Schmidt
To: SBENKA
Date: Tue, May 9, 2000 9:47 PM
Subject: Rahman manuscript

Steve --

That's good news that the Rahman manuscript arrived. I looked it over and think it is ready for external review.

I hope the review is quick, because I have run out of articles to edit and I wish to meet my annual editing goal.

I think the first figure in Rahman's article should be an image produced by a superconducting detector.

-- Jeff

CC: tgary, jschmidt

PHYSICS TODAY

FAX transmission from

Stephen G. Benka, Editor
One Physics Ellipse
College Park, Maryland 20740-3843
301-209-~~3042~~ 3037
Fax: 301-209-0842

TO: **TERRI BRAUN**
Fax: 516-576-2295
Date: May 24, 2000 Pages (including this one): 8

Terri,

You can also find these pages at http://disciplined-minds.com

Steve

D00554

http://disciplined-minds.com Welcome to the DISCIPLINED MINDS Web Site!

"Disciplined Minds is a witty, incisive, original analysis of the politics of professionalism -- especially with respect to those fields in which professional training involves an education in how to become oblivious to the political role of one's profession."
-- Michael Berube,
University of Illinois

"A blistering critique of how knowledge workers have been subordinated in America. Finally, a book that tells it like it is."
-- Stanley Aronowitz,
Author of The Jobless Future

"I have been waiting a long time for someone to write this book, and Jeff Schmidt has done it. He exposes, in crystal-clear prose, the inevitably political nature of the professional in our society, and, most importantly, suggests a strategy for resistance. This is an extraordinary and valuable piece of writing."
-- Howard Zinn,
Author of A People's History of the United States
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"This book is stolen. Written in part on stolen time, that is. I felt I had no choice but to do it that way. Like millions of others who work for a living, I was giving most of my prime time to my employer..."
So begins Jeff Schmidt in this riveting book about the world of professional work. Schmidt demonstrates that the workplace is a battleground for the very identity of the individual, as is graduate school, where professionals are trained. He shows that professional work is inherently political, and that professionals are hired to maintain strict "ideological discipline."
The hidden root of much career dissatisfaction, argues Schmidt, is the professional's lack of control over the political component of his or her creative work. Many professionals set out to make a contribution to society and add meaning to their lives. Yet our system of professional education and employment abusively inculcates an acceptance of politically subordinate roles in which professionals typically do not make a significant difference, undermining the creative potential of individuals, organizations and even democracy.
Schmidt details the battle one must fight to be an independent thinker in today's corporate society. He shows how an honest reassessment of what it really means to be a professional employee can be remarkably liberating. After reading this book, no one who works for a living will ever think the same way about his or her job.

Introduction Table of contents

About The Author

Jeff Schmidt is an editor at Physics Today magazine. He has a PhD in physics from the University of California, Irvine, and has taught in the United States, Central America and Africa. Born and raised in Los Angeles, he now lives in Washington, D.C.

Write the author: jeff@disciplined-minds.com

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Introduction

This book is stolen. Written in part on stolen time, that is. I felt I had no choice but to do it that way. Like millions of others who work for a living, I was giving most of my prime time to my employer. My job simply didn't leave me enough energy for a major project of my own, and no one was about to hire me to pursue my own vision, especially given my irreverent attitude toward employers. I was working in New York City as an editor at a glossy science magazine, but my job, like most professional jobs, was not intellectually challenging and allowed only the most constrained creativity. I knew that if I were not contending with real intellectual challenges and exercising real creativity—and if I were not doing anything to shape the world according to my own ideals—life would be unsatisfying, not to mention stressful and unexciting. The thought of just accepting my situation seemed insane. So I began spending some office time on my own work, dumped my TV to reappropriate some of my time at home, and wrote this book. Not coincidentally, it is about professionals, their role in society, and the hidden battle over personal identity that rages in professional education and employment.

The predicament I was in will sound painfully familiar to many professionals. Indeed, generally speaking, professionals today are not happy campers. After years of worshiping work, many seemingly successful professionals are disheartened and burned out, not because of their 70-hour workweeks, but because their salaries are all they have to show for their life-consuming efforts. They long for psychic rewards, but their employers' emphasis on control and the bottom line is giving them only increased workloads, closer scrutiny by management and unprecedented anxiety about job security. In this way the cold reality of employer priorities has led to personal crises for many of this country's 20 million professionals.

Burned-out professionals may not be immediately obvious to the casual observer, because typically they stay on the job and maintain their usual high level of output. But they feel like they are just going through the motions. They have less genuine curiosity about their work, feel less motivated to do it and get less pleasure from it. The emotional numbness inevitably spreads from their work lives into their personal lives. According to Herbert J. Freudenberger, the New York psychologist who coined the term burnout in the mid-1970s, the personal consequences are wide-ranging and profound: cynicism, disconnection, loss of vitality and authenticity, decreased enjoyment of family life, anger, strained relationship with spouse or partner, divorce, obsessive behavior such as "workaholism," chronic fatigue, poor eating habits, neglect of friends, social isolation, loneliness—and the list of symptoms goes on. Freudenberger tells me he has seen a big increase in career burnout among professionals in the past twenty years. Ironically, such depression is most likely to hit the most devoted professionals—those who have been the most deeply involved in their work. You can't burn out if you've never been on fire.

The problem shows no sign of easing. In fact, the ranks of troubled professionals are swelling as members of Generation X finish school and rack up a few years in the workforce. Many Xers, having observed the unfulfilling work ethic of their baby boom predecessors, want their own working lives to be fun and meaningful from the get-go. Starting out with priorities that took boomers a decade to figure out, but in no better position to act on those priorities, Xers are simply having career crises at an earlier age. Clearly, there is an urgent need to understand why career work so often fails to fulfill its promise.

I argue that the hidden root of much career dissatisfaction is the professional's lack of control over the "political" component of his or her creative work. Explaining this component is a major focus of this book. Today's disillusioned professionals entered their fields expecting to do work that would "make a difference" in the world and add meaning to their lives. In this book I show that, in fact, professional education and employment push people to accept a role in which they do not make a significant difference, a politically subordinate role. I describe how the intellectual boot camp known as graduate or professional school, with its cold-blooded expulsions and creeping indoctrination, systematically grinds down the student's spirit and ultimately produces obedient thinkers—highly educated employees who do their assigned work without questioning its goals. I call upon students and professionals to engage in just such questioning, not only for their own happiness, but for society's sake as well.

This book shows that professional education is a battle for the very identity of the individual, as is professional employment. It shows how students and working professionals face intense pressure to compromise their ideals and sideline their commitment to work for a better world. And it explores what individuals can do to resist this pressure, hold on to their values and pursue their social visions. People usually don't think of school and work in terms of such a high-stakes struggle. But if they did, they would be able to explain why so many professional training programs seem more abusive than enlightening, and why so many jobs seem more frustrating than fulfilling.

I decided to write this book when I was in graduate school myself, getting a PhD in physics, and was upset to see many of the best people dropping out or being kicked out. Simply put, those students most concerned about others were the most likely to disappear, whereas their self-centered, narrowly focused peers were set for success. The most friendly, sympathetic and loyal individuals, those who stubbornly continued to value human contact, were handicapped in the competition. They were at a disadvantage not only because their attention was divided, but also because their beliefs about big-picture issues such as justice and social impact caused them to stop, think and question. Their hesitation and contemplation slowed them down, tempered their enthusiasm and drew attention to their deviant priorities, putting them at a disadvantage relative to their unquestioning, gung-ho classmates. Employers, too, I realized, favored people who kept their concerns about the big picture nicely under control, always in a

position of secondary importance relative to the assigned work at hand. Thus I saw education and employment as a self-consistent, but deeply flawed, system. I wrote this book in the hope of exposing the problem more completely and thereby forcing change.

A system that turns potentially independent thinkers into politically subordinate clones is as bad for society as it is for the stunted individuals. It bolsters the power of the corporations and other hierarchical organizations, undermining democracy. As I will explain in detail, it does this by producing people who are useful to hierarchies, and only to hierarchies: uncritical employees ready and able to extend the reach of their employers' will. At the same time, a system in which individuals do not make a significant difference at their point of deepest involvement in society—that is, at work—undermines efforts to build a culture of real democracy. And in a subordinating system, organizations are more likely to shortchange or even abuse clients, because employees who know their place are not effective at challenging their employers' policies, even when those policies adversely affect the quality of their own work on behalf of clients.

This book is intended for a broad range of professionals, nonprofessionals and students, and for anyone interested in how today's society works. It is for students who wonder why graduate or professional school is so abusive. It is for nonprofessionals who wonder why the professionals at work are so often insufferable, and who want to be treated with greater respect. It is for socially concerned professionals who wonder why their liberal colleagues behave so damn conservatively in the workplace. (Chapter 1 explains how professionals are fundamentally conservative even though liberalism is the dominant ideology in the professions.) It is for individuals who are frustrated by the restrictions on their work and troubled by the resulting role they play—or don't play—in the world. It is also for those who simply find their careers much less fulfilling than they had expected and aren't exactly sure why.

Disillusioned lawyers, doctors, financial analysts, journalists, teachers, social workers, scientists, engineers and other highly educated employees are looking for a deeper understanding of why their lives are stressful and feel incomplete. My hope is that readers will find such an understanding in these pages, along with effective strategies for corrective action. If you are a professional, coming to understand the political nature of what you do, as part of an honest reassessment of what it really means to be a professional, can be liberating. It can help you recover your long-forgotten social goals and begin to pursue them immediately, giving your life greater meaning and eliminating a major source of stress. It can help you become a savvy player in the workplace and reclaim some lost autonomy. And, ironically, it can help you command greater respect from management and receive greater recognition and reward, without necessarily working harder.

If you are a student, understanding the political nature of professional work can help you hold on to your values and moral integrity as you navigate the minefields of professional training and, later, employment. For students

trying to get through professional training intact, this book can serve as something of a survival guide, explaining the frightening experiences and warning of what lies in store.

If you are a nonprofessional, you experience even more lack of control, unfulfilling work, insecurity and other sources of stress than do professionals. As a consequence, the toll on your physical and psychological well-being is even greater than that suffered by professionals. If you want to act individually or collectively to improve your situation, then it pays to know what makes your professional coworkers tick. Such awareness can help you figure out which people you can trust and how far you can trust them. When professional and nonprofessional employees maintain solidarity in the workplace, they can cover for each other and get more concessions from their employer. But any alliance between unequal partners is doubly risky for the less powerful party—in this case the nonprofessionals, who are at the bottom of the workplace hierarchy. By understanding professionals, you reduce the chances of being double-crossed by them. You'll be treated with more respect, too.

Whatever your occupation, you have to deal with a variety of professionals when you are off the job. Most of these professionals work for others, not directly for you. Whether you visit an HMO, send kids to school, request a government service, see a counselor, get assistance from a social worker, deal with a lawyer, file a consumer complaint or contact a local TV station or newspaper, understanding the political nature of professional work will help you get better service. If you are involved in an independent organization working for social change, you have to contend not only with professionals in the corporations or agencies that your group confronts, but also with professionals advising your own organization. Groups that simply trust professionals without truly understanding them are very likely to be misdirected or sold out by those professionals.

And, of course, everyone deals with professionals indirectly, too. For instance, newspapers, magazines, radio and television are filled with supposedly objective news reports, analyses and studies prepared by professionals. What should you believe? To truly understand the output of these or other professionals, you first need to understand the political nature of the professional's role at work.

The political nature of professional work is this book's unifying theme. To make the case that the professional's work is inherently political, I examine not only professionals and what they do (part one: chapters 1 to 6), but also the system that prepares them to do it (part two: chapters 7 to 13) and the battle that one must fight to be politically independent (part three: chapters 14 to 16).

My hope is that whether you are a professional, a nonprofessional or a student, you will find here an unsettling but empowering new way of looking at yourself, your colleagues, the institution that employs or trains you, and society as a whole. This book strives to arm you with a very

practical analytical tool that you can use to your advantage in whatever individual and collective struggles you find yourself in as an employee, student, organization member, consumer or citizen.

A note on pronouns. To avoid overuse of phrases such as "he or she," I will use female pronouns in part one and male pronouns in part two (the problem doesn't arise in part three). Today most professionals are women, and the female majority, which stood at 53% in 1997, is growing. Women have long made up large majorities in professions with relatively low social status and salary; thus teachers, social workers, registered nurses and librarians have been said to labor in the subprofessions. But today the proportion of women is increasing throughout the professions. Nearly half the students now in medical school and law school, for example, are women, up from about 9% in 1970.

A note on references. Many of the references listed at the end of each chapter make for fascinating reading. I encourage you to look further into topics in this book that interest you, and so I have given lots of references and have spelled things out to make them as easy as possible to look up. Time spent with these materials will surely be thought provoking, informative and entertaining.

TABLE OF CONTENTS

PUBLISHING

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men are seriously impaired," says Dr. Pope, "because the ones who are seriously impaired are precisely the ones who are reluctant to talk about it."

So they devised creative ways to marshal their evidence. To measure the prevalence of pathologies like male bulimia and steroid abuse, they extrapolated from small study samples. Their theory that society values ever-stronger, ever-leaner physiques sent them to the Library of Congress to compare *Playgirl* magazine models over time. And Dr. Pope's 14-year-old, Barbie-owning daughter gets credit for suggesting that his team look at boys' "action figures" as an indicator of how the ideal male physique has evolved. (G.I. Joe Extreme's life-size counterpart would have 27-inch biceps and a 55-inch chest—a specimen rarely found in nature.)

Unfortunately, say the authors, the taboo against overt male vanity inhibits men from seeking help for their disorders. That's one reason their book includes several do-it-yourself diagnostic quizzes. They hope that publicity for the book will smash the taboo.

That hope may be well-founded. The Free Press released the book on May 17, a month early, after *Time* magazine wrote about it in a lurid cover package on testosterone and men's bodies. Dr. Pope wouldn't mind a little time on talk shows, too, where he could offer viewers valuable caveats. The most important, he says, is that concern with appearance is pathological only if it causes distress. After all, he notes, he spends 12 hours a week in the gym, and feels perfectly normal.

■

STEAL THIS BOOK: **Jeff Schmidt** did. "This book is stolen," the *Physics Today* magazine editor declares at the beginning of his new work, which he wrote on the job when his bosses weren't looking. "Written on stolen time, that is."

Mr. Schmidt acknowledges that at first glance, his book could also be seen as an exercise in bait-and-switch. With the title, *Disciplined Minds*, in bold letters on the spine, and the category "Careers" stamped on the back cover, the book will no doubt attract the attention of hard-working professionals eager for an edge over their competitors—we mean, colleagues.

But Mr. Schmidt's subtitle—*A Critical Look at Salaried Professionals and the Soul-Battering System That Shapes Their Lives*—tells a different tale.

He envisions the readers of *Disciplined Minds* (**Rowman & Littlefield**) not as ladder-climbing careerists, but as "dissatisfied professionals and disillusioned graduate students—the majority."

Maybe you can identify. Mr. Schmidt believes that most people enter the work world or graduate school with the belief that their labor will be of social value. More often, they find that it's of only economic value—and not primarily to them. The hierarchies of professionalism leave them alone on their ladders, afraid to make a change.

If that sounds bleak, he has the solution. After examining the worlds of work and education with an eye for the political, he concludes with "Now or Never," a 33-point manifesto for changing the world, or at least your office.

It's not rocket science, says Mr. Schmidt, who earned his Ph.D. from the University of California at Irvine. Form a union, fight elitism, and "undermine management's information advantage."

Sound like hard work? You're already doing it. For laborers in academe, Mr. Schmidt recommends reading "the weekly intelligence report for university bosses," *The Chronicle of Higher Education*.

—D. W. MILLER AND JEFF SHARLET

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Disciplined Minds: A Critical Look at Salaried Professionals and the Soul-Battering System That Shapes Their Lives

Jeff Schmidt

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From: Jeff Schmidt
To: Bert Schwarzschild, Charles Day, Elliot Plotkin,...
Date: Tue, May 30, 2000 2:29 PM
Subject: Book note

Hi --

I'd like to share with everyone these generous comments that I received today from Spencer Weart, manager of the AIP Center for History of Physics.

-- Jeff

From: Spencer Weart
To: Jeff Schmidt
Date: Tue, May 30, 2000 7:52 AM
Subject: Your book

Hi Jeff,

Thanks very much for "Disciplined Minds." I've read it and will pass it on to the Niels Bohr Library. We'll put it on the loan shelf for ACP staff and later transfer it to the "scientific community" section of the bookstacks.

I read your book more thoroughly than I expected to -- but then I should have known it would be well-written, coming from you. More unexpected was the number of original and interesting ideas, more than I usually find in one book. You haven't just repeated old cant but have rethought a lot of things in a "radical" way, in the good original sense of the word, going to the roots. You say a lot that made me pause to think. Maybe my favorite chapter, especially novel and stimulating for me, was your deconstruction of the physics qualifying exams. But there was lots elsewhere too.

Of course I don't agree that everything you claim is universally true. Many things don't match with my own professional experience -- which I know has been lucky in many ways, but not unique either. You show "the system" in a one-sided way (for example, you mention the physicists who loyally worked with Jason on military matters during the Vietnam War, but you pass over the established physicists who opposed the war, including so many within Jason itself that at one point the group was crippled by the division). The consequence of this viewpoint is that you emphasize confrontation over cooperation more than I would prefer. For example, while your use of the Army manual on resisting brainwashing does bring up new thoughts, I'm certain that for most situations it would be wrong to equate (as you imply) "faculty" or "management" with "the enemy." But I suppose you're aware that you've painted your picture in the starkest black and white, and I respect that as a rhetorical tool in a work of this nature.

Reading your book brought back memories of reading (ca. 1969) "The Student as Nigger," which first woke me up to some of these issues. I fear that not many people are reading that sort of essay nowadays, and anyway you go way beyond Rubin or anything else I've seen on these topics (not that I've seen all that much). So I hope lots of people get a chance to read your thoughtful, stimulating and -- well, what other word is there -- provocative book.

Cheers,

Spencer

PHYSICS TODAY STAFF (alphabetical) - 11/23/99

NAME: Judy Barker
JOB DUTIES: Assistant Editor -- Buyers' Guide, Index, Calendar, writes for We Hear That and Meeting Previews, proofreader.
HISTORY: Began as support staff in 1993 before the move to Maryland. Showed editorial ability and was given opportunity to grow.
SOME PERSONAL CHARACTERISTICS: Solid, dependable, congenial, adaptable, well organized, tackles special projects with minimal supervision. Two thumbs up.

NAME: Steve Benka
JOB DUTIES: Editor-in-Chief, Managing Editor
History: Hired in 1993 as Associate editor, promoted to Editor-in-Chief in Sept 1994. PhD in physics.
SOME PERSONAL CHARACTERISTICS: To be determined.

NAME: Charles Day
JOB DUTIES: Associate Editor – Articles editor; Obituaries editor; Search and Discovery reporter
HISTORY: I hired him in 1997. PhD in physics (astronomy)
SOME PERSONAL CHARACTERISTICS: Energetic, capable, efficient, bright, congenial. Perhaps the most efficient manager of time on the staff; always gets his work done without staying late. Because he is quick, his editing is sometimes superficial or sloppy; yet takes constructive criticism well. Has wide-ranging interests and often pokes around in corners of physics neglected by others on the staff. A free-thinker with a keen sense of humor. Full of ideas, but not locked in to them. Writes excellent copy. Ambitious, and recognizes that his ambitions might not be fulfilled at PT. Two thumbs up.

NAME: Paul Elliot
JOB DUTIES: Chief Copyeditor; Letters dept editor
HISTORY: I hired him in 1995
SOME PERSONAL CHARACTERISTICS: Very intelligent, analytical mind. Competent, effective copyeditor, but could be more efficient (quicker). Produces an excellent Letters dept, but never on time. Generates prose that can be a bit pompous or least "wooden." Revels in the problem-solving process, and is good at it. For example, tends to view each Letter in that light, seeking and finding the best way to get the cooperation we need from each author. This talent of his often brings fresh ideas to PT's procedural discussions. Like many good copyeditors, has obsessive-compulsive tendencies that slow him down (everything is deliberately and carefully considered), but not to the point of paralysis. His slowness is a source of frustration to the staff and to me. In fairness, he has a large workload and needs help with the copyediting. (He claims his workload is excessive, I feel it isn't if he managed his time better.) One thumb up.

NAME: Toni Feder
JOB DUTIES: News reporter, Physics Community dept.
HISTORY: I hired her in 1995. PhD in physics.
SOME PERSONAL CHARACTERISTICS: Highly energetic, very bright, probing, quickly-becoming-world-class journalist. Telecommutes from Durham, NC, where her common-law-type-husband has a position at Duke. Strong ties to Europe and enjoys covering that part of the world. Excellent journalistic, average editorial judgements. Two thumbs up.

NAME: Rich Fitzgerald
JOB DUTIES: Associate Editor -- Articles editor, Search and Discovery reporter, We Hear That reporter
HISTORY: I hired him in 1998. PhD in physics
SOME PERSONAL CHARACTERISTICS: Bright, effective, congenial, capable. You read his recent performance review. Two thumbs up.

NAME: Tonya Gary
JOB DUTIES: Assistant to the Editor (support staff)
HISTORY: I hired her in 1998.
SOME PERSONAL CHARACTERISTICS: Hired to replace the last of a series of support staff "drill sergeants." A positive personality was needed more than the office skills, and Tonya filled the bill. She quickly started affecting the office climate for the good, and has continually grown into and developed her office skills. She tries hard and very often succeeds, pushing her own capabilities to the limit. She is very willing to pitch in as needed. She is a bit negligent of certain tasks, but continually works to improve. Has some [redacted].

NAME: Irwin Goodwin
JOB DUTIES: Sr. Editor - Washington Reports editor, political reporter
HISTORY: ~20 years with PT. Previously, journalist with Newsweek (or some similar national weekly).
SOME PERSONAL CHARACTERISTICS: World-class reporter of the scientific/political interface. Very good writer of prose. Unable to meet deadlines. Very high-maintenance for oversight, production, and copyediting staff (Steve, Elliot, and formerly Jean). Difficult personality: often sarcastic, rude, condescending. Nevertheless insightful, can be helpful and cooperative if he chooses to be. Has a profound and adverse effect on staff "outlook," through the tolerance for his tardiness, high-maintenance, and irascibility.

NAME: Warren Kornberg
JOB DUTIES: Books dept editor
HISTORY: Joined PT as a temporary solution when AIP moved to Maryland in 1993. Works 3 days a week. Former editor of *Science News* and of *Mosaic* (magazine of the National Science Foundation).
SOME PERSONAL CHARACTERISTICS: A consummate professional of the "old school," who believes in the total authoritarianism of the Editor, and in never deviating from established workflow processes. Gruff, opinionated, insightful. Excellent editorial judgement and ability. Willing to adapt, but slow to do so. Because of his part-time status and his commitment to "assembly-line" style editing, he uses more of the support staff's time than any three other editors combined, as well as a freelance proofreader. He is thus very "high-maintenance."

NAME: Barbara Levi
JOB DUTIES: Senior Editor – runs the Search and Discovery dept; solicits articles and reviews; oversees Books dept; oversees Meeting Previews; occasionally edits article.
HISTORY: ~30 years with PT, as at least a consulting editor. PhD in physics and still teaches freshman physics when possible (now at Univ of Calif, Santa Barbara). When her husband was diagnosed with Parkinson's disease, they chose to move to Santa Barbara, to best enjoy their remaining time.
SOME PERSONAL CHARACTERISTICS: Competent, efficient, effective, good people skills, all around good guy. Level-headed, fair-minded, and nobody's clone: If you want a second opinion about anyone or anything related to PT, ask Barbara or Elliot. Gloria had been training Barbara to eventually take over as Editor-in-Chief. Barbara has good journalistic insights (what makes a good story) and excellent editorial judgement (what makes good copy). One of our stars, both on staff and in the community. Two thumbs up.

NAME: Gloria Lubkin
JOB DUTIES: Produce Reference Frame column; Solicit articles
HISTORY: 37+ years with PT, 9 years as Editor-in-Chief (~1985-94). Raised the editorial standards of PT. Master's degree in physics.
SOME PERSONAL CHARACTERISTICS: High standards, high personal integrity, good journalistic insights (what makes a good story), below average editorial judgement (what makes good copy). Poor staff relations, excellent community relations. Poor writer, poor editor of copy. Very "high-maintenance"; needs a great amount of help from the staff, both from editors (in producing publishable prose) and from Elliot (in getting that prose into pages), very often at the last possible moment (cannot meet deadlines). Politically savvy in office and community politics. Casts a long, dark shadow over the staff and the staff's "outlook."

NAME: Elliot Plotkin
JOB DUTIES: Art and Production Director – all aspects of art and production
HISTORY: ~25 years with AIP and PT
SOME PERSONAL CHARACTERISTICS: Competent, efficient, effective, good people skills, all around good guy. Level-headed, fair-minded, and nobody's clone: If you want a second opinion about anyone or anything related to PT, ask Elliot or Barbara. Two thumbs up.

NAME: Peter Pulsifer
JOB DUTIES: Part-time Associate editor -- Articles editor
HISTORY: Was a freelancer; hired in 1999 to make up Jeff's other 1/3-time. PhD in physics.
SOME PERSONAL CHARACTERISTICS: New kid on the block. Full of ideas and enthusiasm. Still developing journalistic and editorial judgement. Nice guy.

NAME: Jeff Schmidt
JOB DUTIES: Sr. Associate Editor – Articles editor
HISTORY: 18 years with PT. PhD in physics.
SOME PERSONAL CHARACTERISTICS: Competent articles editor (used to be the best on the staff, in recent years has been mediocre). Often works from home. Has some good ideas, but they are coupled to a strong political agenda: Distrusts all forms of authority, including, of course, AIP and PT management. A committed malcontent. Can be confrontational, always tenacious, never raises his voice. Has extremely strong rhetorical skills and therefore can be very persuasive. Has influence over some staff members and can use that influence to promote discontent when it serves his purpose. Beware particularly of him (i) setting up a fabricated "straw-man" target to then knock down, and (ii) putting words into your mouth to his advantage. Productivity and quality had been allowed to slip; when pressure was applied (by me), he stirred up great trouble. When pressure remained, he went on a 6-month sabbatical, returned at 2/3 the workload for 2/3 the salary. His latest editing effort (Berg article for January 2000) is the best I've seen from him in a long time. I complimented him on it.

NAME: Bert Schwarzschild
JOB DUTIES: Sr. Associate Editor – Search and Discovery reporter; Articles editor
HISTORY: 20+ years with PT. PhD in physics.
SOME PERSONAL CHARACTERISTICS: Had reputation for laziness, but when asked (told) to be more productive, rose to the challenge and is now fully and effectively engaged. Very opinionated (sometimes offensively so) and gregarious, likes to be the center of attention when possible (is an amateur actor in the theater). Good journalistic and editorial judgement, but limited in scope (stays within fields he is "comfortable" with: mainly particle physics and cosmology). Excellent writer.

NAME: Marion Smith
JOB DUTIES: Editorial Assistant -- support staff
HISTORY: Brought in as a long-term temp, we hired her in early 1999.
SOME PERSONAL CHARACTERISTICS: Extremely capable, congenial, willing to help. Everyone she works with is impressed with her. Two thumbs up.

NAME: Rita Wehrenberg
JOB DUTIES: Senior Production Assistant -- produces advertising supplements for PT & TIP, Elliot's understudy.
HISTORY: I hired her in 1995. Began as support staff after long hiatus from workforce (magazine production background). Moved gradually back into production, as staffing allowed.
SOME PERSONAL CHARACTERISTICS: Bright, very capable, dedicated, congenial, perfectionist (somewhat obsessive-compulsive, but in a constructive way). Works very hard to achieve excellent results. Has a tendency to be a "victim," with perhaps low self-esteem. If you need a second opinion on production and workflow-related matters, ask Rita.

Marlowe Hood

June 15, 2000

Randolph A. Nanna
Publisher
Physics Today
One Physics Ellipse
College Park, Maryland 20740

re: Jeff Schmidt, formerly of *Physics Today*

Dear Mr. Nanna:

What did you gain by firing Jeff Schmidt? I am flummoxed by this question as I consider all the things you damaged or lost: *Physics Today*'s most competent articles editor; the magazine's perennially fragile collective morale; and, most flagrantly, AIP's public image and credibility. Let's take these one by one.

Unless another blue-pencil virtuoso of even greater talent has joined the staff since my year-long stint with the magazine in the early 1990s, Jeff was the best articles editor you ever had or are likely to have. (I've spent more hours than I care to count doing the same thing, so I know whereof I speak.) Not only does he edit with an all-too-rare technical precision, he has an uncanny ability to coax even the most prickly of authors towards clarity and coherence. Titles and hubris do not cow him, and he is doggedly but politely persistent. Ask any of the hundreds of authors who have benefited from his patient – dare I use the word – professionalism. Jeff would no doubt bristle at such a compliment, but what else does one call the ability to perform consistently at such high levels even if one is, assuming for a moment that your inference from his book is correct, less than "fully engaged" in one's work? Indeed, what more can you ask of an articles editor – even one with a PhD – except that he do his job well? Is it reasonable to also demand devotion? Do you even have the right to?

If misuse of company time is the principal crime for which Jeff has been tried and convicted, then I can assure you that – during the time I worked in the same office – he was far from the most egregious offender. Others must come forward on their own, but I certainly can speak for myself: not only did I spend time researching and writing a weekly column for a major daily newspaper while sitting at my desk, the staff spent a fair amount of time discussing the topics I chose. It was no secret. I did every scrap of work that was given to me as soon as it was given to me. But I reclaimed the time left over as my own.

As for the morale of the magazine's staff, what did you anticipate the impact of dismissing Jeff would be? Is this intended as a lesson to his erstwhile colleagues? If so, the lesson will probably have backfired. Do you expect that things will run

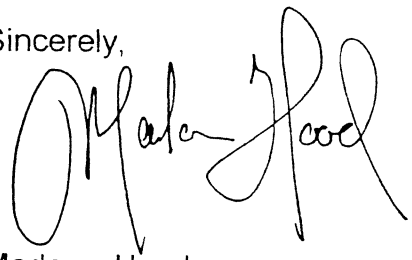
55bis Quai de Valmy, 75010 Paris tel : (33 1) 40 40 42 38 fax : (33 1) 40 41 81 40 hood@cybercable.fr

more smoothly now that you are rid of this alleged rabble rouser? Jeff was open and above-board in his efforts to improve, as he saw it, the work environment at *Physics Today*. One could disagree with his ideas, as I sometimes did, but still respect the integrity and aim of his efforts. The fact that neither these activities nor the writing of his book interfered with his contractual duties is evident from his long-term tenure at the magazine.

Finally, it is AIP's credibility that will suffer most. How can an organization purporting to represent the highest form of science summarily dismiss a proven employee of long standing without an inquiry or even offering him the chance to defend or explain himself? Where is the scientific method in that? Did it ever occur to you to ask *how much* time Jeff actually 'stole' or whether the opening line to his book was simply an attention-grabbing, rhetorical flourish? I'm sorry to put it so bluntly, but the whole sorry affair makes you look just plain bad, and it will not pass unnoticed. The article in the *Chronicle of Higher Education* is only a foretaste of the interest this episode is likely to generate.

In the end, you will, I am convinced, regret firing Jeff Schmidt and frog-marching him out the door. Alas, it will probably be for the wrong reasons.

Sincerely,



Marlowe Hood
Editor, Agence France Presse
Maître de Conference, French Press Institute (Sorbonne)

cc: Marc H. Brodsky, James H. Stith

55bis Quai de Valmy, 75010 Paris tel : (33 1) 40 40 42 38 fax : (33 1) 40 41 81 40 hood@cybercable.fr

JONATHAN ALLEN. Ph.D.

3 Creek Rim Drive

Titusville, New Jersey 08560

Telephone and Fax (609) 737-8896

5 June 2000

Mr. Randolph A. Nanna
Publisher
Physics Today
One Physics Ellipse
College Park, MD 20740-3843

Dear Mr. Nanna:

An article in the 2 June Chronicle of Higher Education, (Online Edition) described how Jeff Schmidt was ignominiously fired from the Physics Today Staff. The article strongly implies that Dr. Schmidt was dismissed because he wrote Disciplined Minds, a book which criticized and poked fun at bosses, including his own. I have attached a copy of the article for your reference.

If Dr. Schmidt was fired in retaliation for writing his book, then this is a most distressing development. I have been a member of the APS for about 30 years and a Life Member for at least 15. Throughout that time I have admired the organization not only for its scientific work but for its bravery in defending academic and intellectual freedom throughout the world. How hypocritical it would be to purpetrate such an injustice within its own house!

I would like to hear your side of the story before coming to a conclusion which would severely damage my respect for the APS,

Very truly yours,

Jonathan Allen

Jonathan Allen

AL579623

http://chronicle.com/daily/2000/06/2000060201n.htm

Book That Challenges Office Hierarchies Costs the Author His Day Job

By JEFF SHARLET

Jeff Schmidt says his employers at *Physics Today* disliked his new book, *Disciplined Minds: A Critical Look at Salaried Professionals and the Soul-Battering System That Shapes Their Lives,* so much that they decided to discipline *him.* In fact, they fired him.

Mr. Schmidt believes the trouble began after his boss, Stephen G. Benka, caught a co-worker reading an item about the book in *The Chronicle.* "She was laughing out loud when my boss came along and asked, 'What's so funny?'" says Mr. Schmidt. Apparently, Mr. Benka was not amused by Mr. Schmidt's statement, quoted from the book, that he'd written *Disciplined Minds* (Rowman & Littlefield) partly on time stolen from work.

"He read it right there, but he didn't laugh," says Mr. Schmidt.

On Wednesday, Mr. Benka asked him to join the publisher, Randolph A. Nanna, for a trip to the human-resources department. There a human-resources professional told him that he was being "terminated with cause" after 19 years at the magazine, during which Mr. Schmidt says he'd consistently received above-average or satisfactory evaluations. Then he was escorted out of the building without being allowed to return to his office.

Neither Mr. Nanna nor Mr. Benka would comment. Theresa C. Braun, director of human resources for the nonprofit American Institute of Physics, which publishes the magazine, said only that Mr. Schmidt "was not terminated because of the *[Chronicle]* article, nor because of the general content of the book."

Mr. Schmidt, who earned a Ph.D. in physics from the University of California at Irvine, says they told him that the very existence of the book was evidence that he wasn't "fully engaged" at *Physics Today.*

In fact, Mr. Schmidt's book argues that it is impossible to be "fully engaged" in a hierarchical institution, an argument that would hardly strike most people as new or shocking. The strength of the book, according to its supporters, lies in its humor and its detailed examination of the particularities of professional life.

"A witty, incisive, original analysis of the politics of professionalism," wrote Michael Bérubé, an English professor at the University of Illinois at Urbana-Champaign, in a jacket blurb. "Finally, a book that tells it like it is," wrote Stanley Aronowitz, a sociologist at the City University of New York.

Or now, for Mr. Schmidt, how it was.

From: Jeff Schmidt
To: RNANNA
Date: Thu, Apr 6, 2000 5:44 AM
Subject: Vacation carryover numbers

Randy --

At our meeting yesterday you agreed with me once again that my 10 November 1999 request to be allowed to either use my "excess" vacation time or carry it over to 2000 was reasonable. You indicated further that last year I was wrongly prevented from using my vacation time (by management's failure to respond to my repeated requests until 10 December 1999).

Logically, then, one would expect you to allow me to carry over the vacation time. However, you said that you would allow me to carry over only half of the vacation time that I lost as a result of your mistake. You described this as a "compromise." I then asked (and have yet to receive a real answer) why I should be forced to suffer half the consequences of your mistake.

I also asked you to be fair -- that is, to treat me in the same way that you treat other employees in the same situation, rather than in a discriminatory fashion. I noted, for example, that you are allowing Paul Elliott to carry over all of his "excess" vacation balance from last year. In fact, Paul is using that vacation time right now. As you know, he submitted his vacation request a week after I submitted mine last November.

I have now checked the numbers, and I found two errors in your calculation. First, according to the numbers on my 15 January 2000 earnings statement, the amount of "excess" vacation time at the end of 1999 was 186.61 hours, not twenty 7.5-hour days as I think you assumed.

Second, the amount of vacation time that I was automatically allowed to carry over was abruptly lowered, without any advance warning to me, to 175 hours from 262.5 hours the previous year. I didn't discover this change until I saw my earnings statement of 15 January 2000 -- obviously too late to do anything about it. Evidently, at some point near the end of September 1999, the portion of my vacation balance that I needed to use (or lose) by the end of the year was suddenly increased without my knowledge. The fact that I wasn't told about this deprived me of the knowledge that I needed to use (or lose) a lot more vacation time than I had thought. Because this occurred so late in the year (what if it had occurred on, say, 20 December?), and because it wasn't explained to me, I ask you to please readjust the automatic carryover back to what it was the previous year.

If you did that, then my "excess" vacation balance would be 99.11 hours.

I ask that you please make these corrections.

Jeff

CC: TBRAUN, JSCHMIDT

PHYSICS TODAY MEMO

TO: Jeff Schmidt
FROM: Steve Benka
SUBJECT: Vacation time

DATE: December 10, 1999

In Randy's absence, he has asked me to send this memo.

You are free to take as much vacation between now and the end of 1999 as your workload for the January and February issues allows.

Your two articles for January are finished. You have no articles scheduled for February. Please let me know your schedule as soon as possible.

Randy and I have been working on the issue of your excess leave, but an answer is still not imminent. We hope to know by the end of next week.

CC: Randy Nanna

From: Jeff Schmidt
To: SBENKA
Date: Mon, Dec 13, 1999 12:42 AM
Subject: Vacation

Steve --

Thank you for your 10 December memo concerning vacation time. I am sure you know that it is generally not possible to plan effective use of vacation time on short notice. But I started planning as soon as I got your memo, and I am doing my best to see how much vacation time I can make plans to use effectively this month.

So far, I am planning to be on vacation for the next six working days (13 - 20 December). I plan to be in the office on 21 December to work and to attend the AIP holiday party (which I committed to attend with coworkers before I got your memo). After the 21st it would probably be best for me to work some days and take vacation other days, but I won't be able to make specific plans until after the end of this week, when I get the answer to my 10 November vacation request.

-- Jeff

CC: manna, AGERSH, JSCHMIDT

From: Jeff Schmidt
To: i:tbraun@aip.org
Date: Wed, Nov 10, 1999 12:55 AM
Subject: Vacation carryover

Dear Terri --

My vacation balance is more than the amount that one can routinely carry over to the next year. I am writing to you for permission to either use the "excess" vacation time before the end of 1999 or carry it over to next year.

Using it before the end of 1999 might be a problem, because to do so I would have to begin the vacation fairly soon (sometime this month) and let it run through the end of the year. That would interfere with my work at the magazine. But I would rather use the vacation time before the end of the year than lose it (or add it to my sick-bank balance, which already exceeds one thousand hours). My preference is to use a bit of the vacation time this year and carry the rest over to next year. I could plan to use the excess during the first half (or first third) of next year, if that would help.

Alice Gersh and I discussed the predicament, and I brought it to Steve Benka's attention. Thank you for your attention to the matter.

-- Jeff Schmidt

CC: SBENKA, AGERSH, i:JSCHMIDT@aip.org

From: Jim Stith
To: Benka, Stephen
Date: Thu, Nov 18, 1999 12:46 PM
Subject: Fwd: Jeff Schmidt's vacation problem

Steve,

Re the note attached below concerning Jeff Schmidt's "vacation problem". Are you aware of any issues along this line that were discussed, taken into account when Jeff made the request for unpaid leave?

I am in Melville but may be reached by e-mail.

Jim

James H. Stith
Director of Physics Programs
American Institute of Physics
College Park, MD 20740
301 209 3126 (W)
301 209 0841 (Fax)

CC: Nanna, Randy

From: Alice Gersh
To: Terri Braun
Date: Tue, Nov 16, 1999 10:54 AM
Subject: Jeff Schmidt's vacation problem

Terri,
I got to thinking about this, and I wondered how Jeff Schmidt could have come to this situation (i.e., having too much vacation time) when he had just been out without pay for 6 months.

So I looked at the recently-approved policy on Leave of Absence Without Pay (HR Policy # 315.07 in the Policies & Procedures Manual)... and it clearly states that "all accrued vacation time must be used before unpaid leave begins."

So he should have done that, and perhaps we can backtrack and give him pay for as much vacation time as he had back at the beginning of his leave. This way he wouldn't lose any time and we wouldn't have to give him special permission to carry over extra days.

Alice

From: Stephen Benka
To: Dr. James Stith, Terri Braun
Date: Thu, Nov 18, 1999 3:38 PM
Subject: Re: Fwd: Jeff Schmidt's vacation problem

Jim, and others,

Jeff's accrued vacation never entered the discussion prior to his taking leave without pay. It hadn't occurred to me and neither Jeff nor anyone else brought it up.

Enforcing AIP's policy seems reasonable to me, but I'm sure you recognize that Jeff probably wouldn't agree. . . .

Related, Paul Elliot just gave a memo, also requesting to carry additional vacation over to next year. It is addressed to Terri "via Steve Benka, Randy Nanna, Jim Stith." I've ok'ed it and put it in Randy's mailbox. It's my hope that the 50% copy editor we are about to hire will absorb enough of Paul's workload that he'll be able to take some time off next year. I'm sure he hopes the same thing.

Now, about my vacation . . . :-)

--Steve

>>> Jim Stith 11/18 12:49 PM >>>
Terri,

I think this is a reasonable solution. I am checking with Steve to see if there were any issues surrounding vacation at the time that Jeff went on leave. I will be in Melville for the next couple of days and out of the office all next week. Will let you know what I find.

Jim

James H. Stith
Director of Physics Programs
American Institute of Physics
College Park, MD 20740
301 209 3126 (W)
301 209 0841 (Fax)

>>> Terri Braun 11/17/99 05:58PM >>>
Jim: What do you think of this suggestion? I will be back on Friday and speak to you then.

Terri

CC: Nanna, Randy

From: Jeff Schmidt
To: Randy Nanna
Date: Tue, Nov 23, 1999 9:31 PM
Subject: Vacation carryover

Randy --

Thank you for talking with me today about my vacation carryover request. Here are the specifics that you wanted: I would like to take 2.2 weeks of vacation next month (6 - 20 December 1999) and carry over to next year whatever vacation balance remains.

In our discussion I forgot that vacation accounting is no longer done in days. It is done in hours. So predicting the remaining vacation balance would be complicated, but I am sure it will exceed the usual limit.

-- Jeff

CC: Jeff Schmidt, Stephen Benka

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-- Jeff Schmidt

CC: SBENKA, AGERSH, i:JSCHMIDT@aip.org

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-- Jeff

CC: Jeff Schmidt, Stephen Benka

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-- Jeff

CC: rnanna, AGERSH, JSCHMIDT

From: Jeff Schmidt
To: TBRAUN
Date: Mon, Mar 13, 2000 7:14 AM
Subject: Vacation carryover

Terri,

On 10 November 1999 I requested permission to either use my vacation time or carry it over to the year 2000. You did not give me permission to use my vacation time (in time to do so). I assumed, of course, that that was because you preferred that I carry it over. Indeed, this is how you resolved the case of my coworker who was in the same situation. May I please have a note confirming the carryover?

Jeff Schmidt

CC: RNANNA, JSCHMIDT

AMERICAN INSTITUTE OF PHYSICS

Inter-Office Memorandum

TO: Jeffrey Schmidt

FROM: Randolph Nanna

DATE: 3 April 2000

RE: Vacation Request

This will outline our position on your request to use extra vacation carried over from 1999:

1. You will be able to use ten (10) days of 1999 vacation in 2000 in addition to your regular vacation allowance. This is a one-time event only. The balance will be credited to your sick bank.

2. We request that you submit a plan to achieve your required editorial materials, in writing, to magazine management in order for you to use the extra ten (10) days.

3. Please allow ample time for your vacation requests as outlined in memo dated 3-15-2000.

4. Any unused vacation in 2000 will be automatically transferred into your sick bank. This assumes you are already at the maximum vacation carry-over. AIP does allow vacation carry-over up to a maximum of 35 days for your term of service.

cc: J. Stith
T. Braun
S. Benka

From: "Jeff Schmidt" <jschmidt@aip.acp.org>
To: ACP.AIP(charris)
Date: Mon, Nov 23, 1998 1:57 AM
Subject: Interesting psychological phenomenon

Charles --

I've mentioned to a few people that my sabbatical begins on 14 December and goes for six months. The first thing they usually do is calculate the ending date. To do that, they first figure that the sabbatical goes to May, and then they add 14 days, coming up with 14 May.

But I have invented an alternative method for calculating the ending date. Instead of figuring that the sabbatical goes "to" May, I figure that it goes "through" May. So instead of adding the 14 days to the beginning of May, I add them to the end of May, giving me a somewhat different result. Conveniently, 14 June 1999 is a Monday.

Jeff

CC: ACP.AIP(JSCHMIDT)

AMERICAN INSTITUTE OF PHYSICS

INTER-OFFICE MEMORANDUM

TO: James Stith

FROM: Charles Harris **EXTENSION:** 3102

DATE: 20 November 1998

SUBJECT: Leave for Jeff Schmidt

After 17 years with AIP, Jeff Schmidt would like to take a six-month "sabbatical" leave. From 14-31 December 1998, he will be on vacation, and from 1 January to 11 May, he will be on leave without pay. Upon his return, he will assume his regular responsibilities with the magazine. During his absence, his editing duties will be covered by cottage employees and independant contractors.

SCHMIDT.WPD

AMERICAN INSTITUTE OF PHYSICS

INTER-OFFICE MEMORANDUM

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SCHMIDT.WPD